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LAND OPERATIONS



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NORTH ATLANTIC TREATY ORGANIZATION
NATO STANDARDIZATION AGENCY (NSA)
NATO LETTER OF PROMULGATION

September 2003

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Jan H ERIKSEN
Rear Admiral, NONA
Director NSA

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CHAPTER	RECORD OF RESERVATION BY NATIONS
1	US
2	US
3	US
4	None
5	None
6	None
7	None
8	US
9	None
10	None
11	None
12	FR
13	None
14	None
Annex A	None

NATION	RESERVATION
FR	FR does not accept paragraph 1210e(1)a: FR will not use anti-personnel mines or booby-traps.
SP	SP Armed Forces will not carry out any activity of operations which involve the use of devices prohibited by the Treaty of Ottawa.
US	The US Air Force does not accept paragraph 107b or paragraph 247b.
US	The US Army does not accept paragraph 108: it no longer uses deep, close and rear to describe operations on the battlefield. The US Army will use deep, close and rear as spatial orientation, when required. The US Army will use decisive, shaping, and sustaining to describe operations on the battlefield.
US	The US Department of the Navy does not support the use of lasers to blind personnel as an example of electronic neutralization, cited in paragraph 314d, because such use is prohibited by treaty to which the US is a party.
US	The US Department of the Navy does not accept paragraph 328, because US policy excludes US forces from target audiences in psychological operations.
US	The US Department of the Navy does not accept Chapter 8, because it conducts helicopterborne operations.

RECORD OF CHANGES

Change Date	Date Entered	Effective Date	By Whom Entered

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NORTH ATLANTIC TREATY ORGANIZATION
NATO STANDARDIZATION AGENCY (NSA)
NATO FOREWORD

1. The fundamental changes which have occurred in the geo-political structure of Europe over the last few years have meant new challenges and concerns for NATO. Although the main threat against which NATO was originally conceived has all but disappeared, it has been replaced by potential and actual conflict which affect NATO interests.
2. The operations in the Former Republic of Yugoslavia have shown the necessity for NATO forces to work together in the conduct of Alliance or Coalition joint operations. These operations and further developing concepts have shown that elements of different nations land forces regularly deploy alongside, pass through each other's area of operations or be grouped within multinational formations.
3. Operations under these conditions demand a high degree of interoperability. Significant differences do remain, particularly in organization and equipment, and will continue to exist between land forces of the Alliance for some time. Therefore, it is essential that these forces possess a common understanding of the principles of land combat and the appropriate tactics, techniques and procedures to ensure interoperability within the joint battlespace.
4. ATP-3.2 has been developed to ensure this common understanding and approach. It contains much the same content as ATP-35(B) although this has been rationalised within the NATO Joint Hierarchy. ATP-3.2 will continue to be amended, to reflect the fundamental development in NATO's Strategic Concept and the way in which tactical doctrine evolves. ATP-3.2 is subordinate and related to AJP-3 Joint Operations
5. The aim of ATP-3.2 is to outline the doctrine, tactics, techniques and procedures for planning, preparing and executing NATO (alliance or coalition) land component operations within the joint battlespace, in order to maximise combat effectiveness.
6. Although a Joint Related publication, ATP-3.2 is produced as an authoritative guide for Commanders and Staff within the Land Component and to inform Joint Commanders and Staff. The primary focus of ATP-3.2 is combined arms warfighting doctrines, tactics, techniques and procedures at formation (brigade/task force) and above. Doctrine for Other Operations is covered in AJP-3.4 and its subordinate publications.
7. Unless they have indicated otherwise by a stated reservation, nations by ratification of STANAG 2868 (ATP-3.2) have agreed that:
 - a. In dealing with NATO agencies and member nations in all matters of land force doctrine, they will use the terminology in this manual.
 - b. For alliance or coalition operations they will use the doctrine stated in this publication.
8. It is understood and accepted that the land force doctrine of any nation may go beyond and expand on ATP-3.2. However, this must not lead to a decrease in the ability of their land forces to work effectively

together. Similarly, it is realized that national procedures to implement common doctrine may differ markedly. To overcome this potential threat to interoperability requires standardization agreements and multinational field standing operating procedures in areas where interaction is necessary. ATP-3.2 in addition to providing a common doctrine and vocabulary for land operations, will assist with the identification of areas where additional standardization is required.

9. Throughout ATP-3.2, references are given to other NATO documents in which additional or more complete information on particular subjects is to be found. A list of the documents that are related to ATP-3.2 is at Annex A.

Introduction

The Operational Level of War

GENERAL

1. Background

- a. The concept of strategy within the Alliance is defined (AAP-6) as: a 'statement of what is to be done in broad terms sufficiently flexible to permit its use in framing the military, diplomatic, economic, psychological and other measures which stem from it'. Below the strategic level, the 'operational art' provides the vital connection between the strategic objectives and the tactical employment of forces.
- b. Although AJP-01 concentrates on the operational level of combined joint warfare. It is important to identify the nature of the relationship between battlefield tactics and the military strategic aims of the NATO Alliance. It is the purpose of this Introduction, therefore, to remind commanders and staffs of the levels of war and, in particular, to give them an appreciation of the vital connection between the operational and tactical levels. Such an understanding is clearly essential if military strategic objectives are to be translated into effective tactical operations.

2. **Levels of War.** The conduct of modern joint warfare may be viewed in the context of three levels: strategic, operational and tactical. There are no distinct boundaries between the three levels of joint operations and they are not associated with any particular level of command, size of unit, piece of equipment or type of force or component. Actions are defined as strategic, operational or tactical based on their effect or contribution to achieving strategic, operational or tactical objectives. This concept applies not only to conflict but also operations other than conflict.

- a. **The Military Strategic Level.** At the military strategic level, armed forces are deployed and employed in a synchronised fashion with other instruments of power to secure the strategic objectives of the Alliance. The NATO Military Committee (MC) considers the realistic contribution that military force can make to the achievement of Alliance objectives and provides advice to the North Atlantic Council (NAC) through the Defence Planning Council (DPC). In forming that advice the MC would consult with Strategic Commands (SCs) to:
 - (1) Identify the military strategic goals and define the endstate to be established.
 - (2) Recognise any political, financial or legal limitations on the use of force, with particular regard to alliance partners and fix the Rules of Engagement (ROE).
 - (3) Consider the allocation of forces and resources.
 - (4) Establish the outline command arrangements.

Thus an SC may be directed to draft a campaign plan which, subject to NAC approval,

would be passed to the operational commander for development as an operational plan. Thereafter the SC would monitor the operation to ensure that the operational commander continues to have, inter alia, the correct mission, ROE, forces etc.

- b. **Operational Level.** At the operational level the perspective is to transfer strategic guidance in military tasks/missions and to ensure that tactical employment is orchestrated to achieve the strategic objectives. Military forces at this level attain strategic objectives through the design, organization and conduct of campaigns and major operations. The term "operational art" is used to describe the thought processes and means a commander will use at this level.
- c. **Tactical Level.** At the tactical level the perspective is concerned with planning, fighting and winning battles and engagements through the synchronization of manoeuvre and firepower. Successes and failures at the tactical level set the conditions for operational level actions.

3. **Operations of War.** At the operational level land operations are part of the joint operation. The primary land operations of war are the Offence and the Defence. At the tactical level a third operation is also recognised, Delay. Together they permit the flexibility and fluidity of the land battle to be maintained and allow tempo to be varied. They may all take place in contact with the enemy and be conducted simultaneously by elements within a force or sequentially by the force as a whole. To ensure the continuity of operations, the Operations of War are linked by Transitional Phases during Operations in which the force is disengaging or seeking to re-establish contact. These are:

- a. Advance to Contact
- b. Meeting Engagement
- c. Link-up Operations
- d. Withdrawal
- e. Relief of Troops in Combat

4. **Application.** Activities at the operational level link tactics and strategy by establishing operational objectives, sequencing events to achieve the operational objectives, initiating actions and applying resources to bring about and sustain these events. These activities imply a broader dimension of time and space than do tactics; they ensure the logistical and administrative support of tactical forces and provide the means by which tactical successes are exploited to achieve strategic objectives. Although the fundamentals (as discussed in Chapter 1, Section I) apply equally to all the levels of war, three fundamentals require emphasis at the operational level.

- a. **Freedom of Action.** The operational commander has wide ranging freedom to conceive, plan and orchestrate all activity within his area of responsibility in order to gain and retain the initiative, in pursuit of the strategic goals. He will thereby influence the nature of major operations, battles and engagements. Freedom of action to deploy reserves, set priorities and to allocate naval, marine, ground, air and logistics assets and means is therefore of

critical importance. This freedom of action will be subject to external constraints, both political and military. Whilst recognising these constraints, the commander will convey a clear statement of his intent which outlines his concept and establishes the objectives to be achieved by subordinate commanders within his delegated theatre of operations.

- b. **Economy of Effort.** Economy of Effort demands the judicious allocation and employment of resources in order to achieve objectives. This implies the operational level commander's willingness to accept risks in one area in order to concentrate force in another. The operational commander will always keep in mind the need to pre-empt, dislocate or disrupt the enemy in order to get at his centre of gravity and bring him out of balance. He will regard these techniques as preferable to general destruction of the enemy through battle, which will waste valuable resources and may risk not achieving his aim. However, when the centre of gravity of the enemy has been identified and exposed, the commander will concentrate his main effort on the violent destruction or neutralizing of that part of the enemy's force or capability.
- c. **Concentration of Force.** The operational level commander must synchronize all elements of combat power, support and C³I and concentrate his effort, in terms of time and space, against the point at which it will have the greatest effect. This point or set of points may consist of those elements of any enemy force, the destruction or disruption of which renders the attainment of that force's objectives impossible. These elements may be the commander and his staff, the command, control, communications and intelligence, air defence, support or logistic systems, the reserves or morale. It may include the cohesion of those vital elements. In the tactical battle a formation or unit may have to destroy the enemy or remove him from vital ground: at the operational level the effectiveness of any enemy may be reduced by a combination of means of which physical destruction is only one part.

5. **Characteristics of Command at the Operational Level.** Commanders and staffs working at the operational level of war should be aware of a number of characteristics that are peculiar to the function of command at this level, many of which complicate the issue. Not all these characteristics are, however, equally evident in all theatres of operation and will vary with the nature of the campaign to be conducted.

- a. **Relation to Military Strategic Objectives.** The operational level is concerned with the employment of joint, and often combined, forces to attain military strategic goals through the conception, planning and execution of major operations and campaigns. Operational level activity must contribute directly towards achieving defined military strategic objectives. Tactical activity cannot take place purposefully outside this context. Action must always be planned with a view to seeking a decision.
- b. **Joint Operations.** At the operational level, forces will always conduct joint operations. These may involve an air, space, maritime, amphibious, land, special forces, psychological operations or rear area dimension, and government or civil agencies. The operational commander commands all the elements of his force and is able to switch resources swiftly to concentrate where needed.
- c. **Combined Operations.** Forces will be deployed as part of the NATO alliance. This

emphasises the need for good personal relationships between senior national commanders and achieving the maximum practicable levels of standardization of doctrine, operating procedures and equipment. In most cases, national elements must expect to sustain themselves from national resources while cooperating operationally in support of the combined plan. The political dimension will be even more complex in a multinational campaign.

- d. **Scale.** The scale of the operational level is fundamentally different from the tactical level in terms of time, (for decision making, reinforcement and mobilization), area (for manoeuvre) and forces. Commanders will often have to make speculative decisions based on incomplete information well in advance to allow time for the necessary battle procedure and movement of large formations. Planning will therefore need to be continuous and take place on a long term basis. The scale of intelligence and reconnaissance will be significantly different from the tactical level as well. Commanders will need to see deep behind leading enemy formations to ascertain the operational goals of the enemy commander and take action to upset the tempo of his operations.
- e. **Resources.** Commanders must be given the resources required to fulfil their operational objectives. Such resources may be tangible (military forces, logistic assets or host nation support) or intangible, which might include the commanders authority over the time allocated to achieve operational level objectives. Resources should be controlled at the level which ensures their most effective use. They may be decentralized or taken under command and switched as requirements dictate. Despite the general principle that CSS within the NATO Alliance is a collective responsibility, the operational level commander must be given the necessary authority to use parts of host nation infrastructure (eg ports, railways and communications) and CSS (eg transport, POL and medical) resources if his freedom of action is not to be significantly constrained (MC 319/1).
- f. **Nuclear Planning.** The operational level commander participates in the process of nuclear planning. He is concerned with the overall coordination of conventional operations with the employment of nuclear weapons. The decision to employ these weapons, however, will be made at the highest political level.
- g. **Civil-Military Interface.** In all matters concerning national responsibilities the operational level commander will cooperate closely with the national commander in the area. Thus the operational level commander will be concerned with the harmonization of civilian and military interests within his area of responsibility. These will range from the advantages to be gained from host nation support and infrastructure to the problems of refugees and the avoidance of civilian casualties. Once the operations have ended, the military may be the only form of authority in the area, and therefore responsibility for civil affairs will assume greater importance, at least during the return to full civilian control.
- h. **Political Interface.** The freedom of action of the operational level commander will be constrained by several factors outside his control. Political considerations will clearly influence military action at the operational level. This may include such things as the retention or protection of areas which are politically or psychologically, but not militarily significant, restrictions on the use of certain weapons or tactical methods. Less obviously, military activity may adversely affect the political situation by exacerbating rather than resolving it. With this in mind, a commander at the operational level may well require

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political advice but this should not override the strategic direction with which he has been provided through the chain of command.

- i. **Public Information.** Public information is an important feature in the planning and conduct of military operations. It is important that an effective Public Info policy is established prior to the start of operations. The commander and staff need to ensure that:
 - (1) Communiques and statements issued by the force do not provide collateral information valuable to hostile elements.
 - (2) Force security is maintained at all levels of media contact.
 - (3) Subordinates comply with Public Information policy directives.
 - (4) Security vetting/review policy is implemented at all levels of contact with the media.

Commanders and staffs must be aware of the need to maintain a positive and useful media relationship.

6. **Concepts of Operational Design.** (See GOP/MC 133/3). In seeking to structure major operations, battles and engagements in pursuit of the strategic objective, the operational level commander will design his plan of campaign around a number of building blocks, which help him visualize how the campaign will unfold. His skills at this stage form the essence of operational art. A basic outline of these concepts is covered below.

- a. **Operational Objectives.** These are the military goals that need to be achieved in the campaign to produce the strategic endstate - those conditions which determine success in the campaign and which must remain uppermost in planner's minds from first to last. These are usually referred to as the desired endstate and/or criteria for success. A crucial early task facing the commander at the operational level is therefore to determine what military conditions constitute success in relation to the strategic goal. Analysis of strategic direction as part of a rigorous estimate process is a vital prelude.
- b. **Centre of Gravity (COG).** Centres of Gravity exist at the strategic, operational and tactical levels and are described as the hub of all power and movement on which everything depends, or the point against which all energies should be directed. The COG is that characteristic, capability, or locality from which a military force, nation or alliance derives its freedom of action, physical strength, or will to fight. A COG may include: the mass of the opposing forces or their command structure, public opinion, National will, and an alliance or coalition structure. As they design their plan, a commander and his staff must also consider their own sources of strength and weakness as well as those of the opposing forces.
- c. **Decisive Points.**
 - (1) Decisive points are the keys to getting at the opponent's COGs. Control of decisive points provides commanders with an advantage over the opposing forces and greatly

influences the outcome of an action. Decisive points can include infrastructure or terrain features that are critical for the continued momentum of operations or the rapid shifting of the direction of manoeuvre and provide a pathway for advancing forces. They may be geographical in nature, but could also be elements that sustain command, such as a command post, critical boundary, airspace or a communications node.

- (2) Proper action at decisive points allows commanders to gain the initiative, retain freedom for operational manoeuvre, and maintain momentum and initiative. Securing decisive points can give the operational commander the flexibility to select more than one line of operation for further advance.
- (3) Normally, there will be multiple decisive points in a theatre. Planners must analyse all potential points and determine which enable the best options for eventual attack of the opposing force's COG. Commanders designate the most important decisive points as objectives and allocate resources against them.

d. **Direct and Indirect Approach.**

- (1) The direct approach involves a linear, uninterrupted approach (straight-on/head-on) against an opposing force's COG, often by way of critical decisive points. This direct approach may mean engaging the opponent's strengths (the protection of his COG and decisive points).
- (2) The indirect approach attacks opposing forces' COG from unexpected directions or at unexpected times. The indirect approach seeks to exploit opposing force vulnerabilities, while avoiding their strength. Examples include flanks, rear areas, line of communications or C2 facilities.

e. **Lines of Operation.** (See Figure 1).

- (1) Lines of operations define the directional orientation of the force in time and space in relation to opposing forces. They connect a force with its base of operations and its objectives. Lines of force integrate firepower, PYSOPS, deception, special operations, and manoeuvre to converge on the opposing force's COG.
- (2) A force operates on "interior" lines when its operations diverge from a central point. Interior lines benefit a weaker force by allowing it to shift the main effort laterally more rapidly than the enemy.
- (3) A force operates on "exterior" lines when its operations converge on an enemy. Successful operations on exterior lines require a stronger force, but offer greater opportunity to encircle and defeat a weaker opponent.

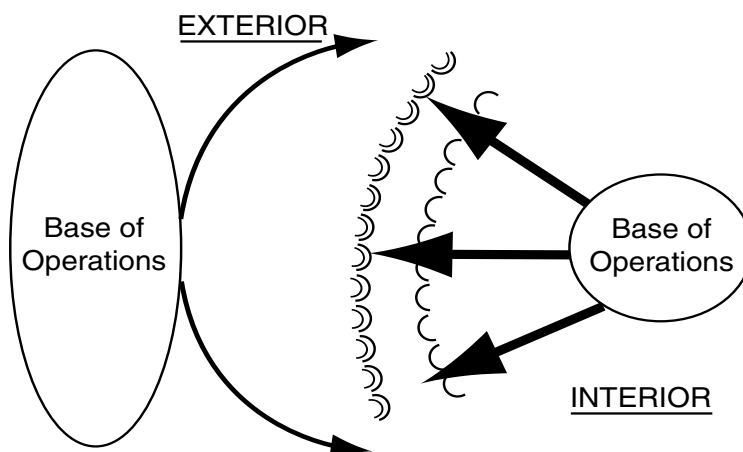


Figure 1. Lines of Operations

- f. **Culmination.** Culmination is that point in an operation when the force can no longer continue operations. It has both offensive and defensive implications.
- (1) In the offence, the culminating point is that point in time and location when the attacker's combat power no longer exceeds that of the defender. Here the attacker greatly risks counter attack and defeat and continues to attack only at great peril. The art of the attack, at all levels, is to secure the objective before reaching culmination.
 - (2) A defender reaches his culminating point when he no longer has the capability to go on the counter offensive or defend successfully. The art of the defence is to draw the attacker to his culminating point, then strike when the attacker has expended his resources and is ill disposed to defend himself successfully.
- g. **Manoeuvre.** To manoeuvre is to seek to attain a position of advantage in respect of the opposition from which force can be threatened or applied. Manoeuvre will be directed either towards a decisive point or directly at the opposition's COG.
- h. **Tempo.** Tempo is the rate or rhythm of activity relative to the opposition, within tactical engagements and battles and between major operations. It incorporates the capacity of an allied joint force to make the transition from one operational posture to another.
- i. **Operational Pause.** An operational pause is a temporary cessation of operations after the attainment of major tactical or operational objectives, but prior to reaching one's own culminating point, to regenerate combat power in preparation for delivery of a decisive blow. Adversarial action can also necessitate an operational pause.
- j. **Sequencing Operations/Phasing.**
- (1) Planners must determine the best sequence of major operations to sustain the required tempo of operations to achieve the desired endstate. This will involve the

consideration of a variety of factors, including geography, strategic lift, command structure, logistics, enemy reinforcement, and public opinion, all of which can rapidly change in fluid situations. The sequence that commanders choose, therefore, must be flexible enough to accommodate change.

- (2) The sequence of major operations relates directly to the commander's decision on phasing. A phase represents a period during which a large number of forces are involved in similar activities. A transition to another phase, such as a shift from deployment to defensive operations, will involve a shift in emphasis. During planning, commanders must establish and monitor the conditions to be met before moving on to the next phase.
- k. **Branches and Sequels.** A commander must build flexibility into his plan in order to preserve his freedom of action, even under rapidly changing situations. Branches and sequels permit change to be anticipated and relate directly to the concept of phasing. The commander should never be without options and careful planning of branches and sequels can reduce the risks associated with transition between phases.
- (1) Branches are contingency options built into the basic plan for changing the disposition, orientation, or direction of movement and also accepting or declining battle. They give commanders flexibility by anticipating opposing forces' reactions which could require changes to the basic plan. Planners must anticipate branches and develop contingency plans to provide appropriate flexibility to the commander.
 - (2) Sequels are subsequent operations based on the possible outcomes of the current operation. An operations plan typically includes sequels as subsequent phases in an operation. For example, a Counter Offensive would be a logical sequel to a Defence. Executing a sequel will normally mean beginning another phase of the campaign. Planning sequels is a continuous process during an operation.

7. **Conclusion.** This Introduction provides a short introduction to the conceptual foundation upon which Alliance doctrine for the operational level is built. Understanding of the concept and a joint doctrine for the operational level are essential for the effective implementation of military strategic objectives by coordinated tactical activity. Interoperability within the Alliance remains a key factor. Further detail is available in AJP-01, AJP-3, and in the SC's Guidelines on Operational Planning (GOP).

CHAPTER 1**THE FUNDAMENTALS****SECTION I FUNDAMENTALS****101. Introduction.**

- a. Common sense and balanced judgement are indispensable qualities for a successful military commander, but these qualities alone will rarely ensure success under the rigorous conditions of war. Time is often a critical factor; information may be scanty, unreliable and hard to obtain; danger and fatigue usually exert an adverse influence on judgement, and unforeseen circumstances frequently upset the best laid plans. To meet these exacting conditions the commander's common sense and judgement must be backed by a sound knowledge of certain fundamental factors which have marked the success of commanders in past wars.
- b. The mere application of these fundamentals does not guarantee victory. Circumstances dictate the relative importance of each one and in some cases a commander is unable to adhere fully to one fundamental except at the expense of another. Rapidly changing technology and capabilities also serve to alter the emphasis and application of these fundamentals. A commander's challenge is thus to know where to place the emphasis at any given moment. These fundamentals, therefore, are not immutable laws, but they are a guide to action.

102. The Fundamentals. The following fundamentals are basic to all operations and apply equally to NATO combined joint operations.

a. Human Factors.

- (1) **Leadership.** Commanders at all levels must have the ability and determination to achieve the mission. Equally they must be capable of inspiring their subordinate commanders and men in times of great adversity and danger. The importance of the role of the leader and the difficulty of exercising effective leadership is increased on the modern battlefield by the nature of 24 hours-a-day combat, which has to be sustained.
- (2) **Morale.**
 - (a) Morale is probably the most important single factor in war. High morale fosters an aggressive spirit. The will to win must be present through an army from its commander to the private soldier; it will often decide the outcome of a battle.
 - (b) High morale is the quality which makes men keep going in the most difficult conditions or show outstanding courage in times of fatigue and danger. It is based on confidence, discipline, professional skill, physical conditioning and

self-respect. These can be instilled by realistic, demanding and imaginative training and by insisting on intelligent and sound administration. Above all, morale is enhanced by comradeship and a sense of group loyalty which the commander must foster in his unit's *esprit de corps*.

(c) The surest way to achieve high morale is through success in battle.

- (3) **Initiative.** Individual initiative, within the scope of the mission, linked with resolute action, is a decisive requirement for success in war.
- (4) **Flexibility.** A commander at any level must have flexibility of mind and speed of decision. Unless he has these qualities he will rapidly surrender the initiative to the enemy and probably lose the battle.
- (5) **Endurance.** Troops must be mentally and physically prepared for battle. They must have the will to accomplish their tasks even when opposed by far superior enemy forces, when cut off and in spite of heavy losses.

b. **The Selection and Maintenance of the Aim.**

- (1) In every military operation, it is essential to select and define the aim clearly.
- (2) The selection of the aim is one of the commander's most important duties; it demands clear and logical thought. An aim may be very precise or it may be expressed in broad terms, but it must be unambiguous and direct. Above all, it must be an aim that is attainable with the forces at the commander's disposal. Once decided, it must be adhered to throughout the operation.
- (3) The aim must be circulated as the needs of security will allow, so that subordinates can make it the focal point in their planning. There must be no doubt what the military force is to achieve.

c. **Freedom of Action.** A commander requires the authority to exploit an opportunity or a favourable situation on the battlefield with energy and boldness. He must have the freedom to act independently within the framework of his mission and the higher commander's intent. This includes the requirement for adequate security measures to prevent the enemy achieving surprise and thereby affecting his ability to act freely and maintain the initiative. Freedom of action has increased importance, as command communications in battle may be limited by circumstances or enemy action, at times being only intermittent and at crucial times non-existent.

d. **Aggressive Action.** In all combat operations, even those in which initially the enemy has freedom of action, commanders at all levels must seek every opportunity to retain or seize the initiative and strike the enemy. In the final analysis success in battle depends directly upon the determination of the force, individually and collectively, to close with the enemy and to destroy his will to fight. Frequently, opportunities for victory in battle will be built on the exploitation of opportunities created by subordinate commanders who recognize and seize a favourable situation.

- e. **Concentration of Force.** Military success will result from the concentration of superior combat power at the decisive time and place. Often this will only be made possible by reducing combat power elsewhere.
- f. **Economy of Effort.** A commander must allocate his forces to essential tasks, however, he must not commit more pressure to them than necessary. It is not possible to be strong everywhere and in order to be able to concentrate his forces a commander may have to accept risks by using an absolute minimum of force elsewhere. Advantages provided by terrain should also be used to gain economy of effort where terrain limits the operations of the enemy.
- g. **Mobility.**
 - (1) Mobility is the ability of forces to move in differing conditions and situations. It has a direct influence on a force's capability to achieve its mission. Superior mobility may compensate for numerical inferiority.
 - (2) Mobility is necessary to achieve concentration of effort. Mobility is also necessary to deploy rapidly into range to engage the enemy.
 - (3) Terrain, weapon effects, unfavourable weather conditions and enemy air superiority will affect mobility on the battlefield. Differing degrees of mobility of forces must be taken into consideration.
- h. **Manoeuvre.** To manoeuvre is to seek to get into a position of advantage in respect of the enemy from which force can be threatened or applied. It is the chief means of applying the fundamentals of concentration of effort, economy of force and surprise. In so doing, the enemy is made vulnerable to action against him and it encourages a more mobile and dynamic approach, making operations more unpredictable from the enemy's point of view. Ultimately it concerns seizure and maintenance of the initiative thereby making the enemy react to what is occurring rather than the other way around, and depending for its success on the application of force against identified points of weakness.
- i. **Surprise.** Surprise is an effective and powerful factor in the use of force; its effects on morale can be very great. It can confer the initiative, threaten enemy morale, reduce own casualties and often give material advantages similar to a superior concentration of combat power. When other factors are unfavourable, success may depend almost entirely upon surprise. Surprise can be achieved at all levels by exploiting new equipment and techniques. Its elements are secrecy, concealment, deception, originality, audacity and speed.
- j. **Intelligence.** A commander requires the right information at the right time in order to produce intelligence about the terrain, climate and the enemy. With basic intelligence as a background, current intelligence is required about the enemy and the area of interest, to provide the commander with an up to date assessment of enemy capabilities and intentions. This current intelligence is derived from the processing of a wide variety of information services. The full spectrum of the Global Information Environment should be used to gather and disseminate intelligence.
- k. **Simplicity.** The speed of events and the complexity of modern warfare could well lead to considerable confusion, unless plans are kept as simple and straightforward as possible.

A complex plan may contribute to the failure of an operation. Simple and logical plans are best and stand more chance of success.

- l. **Maintenance of Forces.** A commander must make every effort to maintain the combat effectiveness of his force and must try to accomplish his aim with the minimum losses. Hard fighting over long periods in difficult terrain and bad weather will quickly diminish a unit's combat effectiveness. It must also be expected that forces in contact and reserve formations may be cut off and temporarily isolated or that support may be temporarily disrupted. Every opportunity must be taken for rest and to provide adequate combat service support. The relief of battle-worn units and the provision and replacement of men and equipment, are important when restoring the combat effectiveness of a unit.
- m. **Flexibility.** All military plans must be flexible to allow for the unforeseen and to enable the maximum advantage to be taken of any turn of events. A force must possess the flexibility to enable it to react to a change of plan and switch smoothly from one course of action to another. This entails good training, organization, communications, staff work and the maintenance of a reserve. It also calls for physical mobility of a high order so that new dispositions and grouping can be adopted rapidly and economically.
- n. **Cooperation.**
 - (1) Successful military operations require close cooperation and liaison between the branches of the land forces and the services, between the armed forces and civil authorities, and between allied forces and nations as well as respect for the authority and rights of the sovereign nations in which the force is based or operating.
 - (2) Effective cooperation can be achieved if goodwill and the desire to work in concert are present at all levels. It is based on team spirit and training, and entails the coordination of all activities so as to achieve the maximum combined efforts from the whole.
- o. **Combat Service Support (CSS).**
 - (1) No operational plan is likely to succeed unless great care is devoted to the CSS arrangements. These must be flexible and designed so that the commander has maximum freedom of action. Successful CSS is the ability to make the best and most timely use of available resources.
 - (2) CSS is the indispensable platform for operations and is often the deciding factor in assessing the feasibility of an operation or the practicability of an aim. A commander requires a clear understanding of the administrative factors which may affect his activities. Subject to national concepts and restrictions he should be given the greatest possible degree of control over the CSS plan to enable him to fulfil his operational responsibility. It is equally important that combat service support commanders and their staffs fully understand the nature of operations and hence the support implications.
- p. **Security and Protection.** The commander must take every precaution to secure and protect his force so that he can achieve his mission. He will do so through a wide range of measures, including some or all of the following. See Ch 2, Sect IV and Ch 3, Sect III.

103. **Combined Arms.** The combined arms approach to conducting warfare is an established tactical concept. It is accepted that weapons and units are considerably more effective when they operate in concert than individually. A combined arms manoeuvre grouping is organised from a combination of Combat arm and Combat Support (CS) and Combat Service Support (CSS) arm elements. Armour, infantry and helicopters are the nucleus of the combined arms team. They provide flexibility for commanders during operations. For example, infantry assists the advance of tanks in difficult and close terrain, armour provides protection in open terrain and helicopters can operate over longer distances or provide protection. These elements can generate both complementary and reinforcing effects. It is essential that in formulating his concept of operations, the commander synchronises all elements of his combat power. Each might have a different purpose, but the intention will be to create a synchronised effect against the enemy. The objective is to confront the enemy with a full array of complementary assets; to place him in a no-win situation; to produce simultaneity. The commander will employ:

- a. Infantry, armour and helicopters for manoeuvre
- b. Artillery and aerial fire to enable manoeuvre.
- c. Air defence to protect from air attack.
- d. Counter-battery fire to hinder enemy artillery.
- e. Engineers to enhance mobility, protection, and to obstruct enemy movement.
- f. Electronic warfare to blind and deafen an enemy.
- g. Communications and CSS.

These are just a few examples of combining arms to achieve the greatest effect.

104. **Task Organisation.** A combined arms manoeuvre unit or formation is *task organised* for a specific mission. The fundamental benefit of the grouping is the synergy generated by a combined arms grouping tailored to a specific mission. Units and formations should normally be organised and trained in combined arms groupings in order to limit the amount of reorganization necessary during operations. The characteristics and employment of different elements of the grouping are considered throughout this manual. Together they form an operational grouping with combined manoeuvrability and firepower under a coherent command system. It is a flexible fighting force, which must be capable of conducting all operations of war and transitional operations in most environmental conditions. Regardless of its specific task organisation, the full potential of a combined-arms grouping can only be achieved if its collective training and unit leadership are of the highest order. In particular:

- a. A common understanding of doctrine, tactics, techniques and procedures (TTPs) is essential, at all levels.
- b. Offensive action should be undertaken whenever the opportunity arises, in support of the overall commander's concept of operations, and in accordance with the doctrine and TTPs.
- c. The combined-arms grouping must be capable of achieving and sustaining a high tempo of operations. This stems from effective training, leadership, a common doctrine, well rehearsed drills, and a strong logistic base. This is expressed in tactical terms through the use of a timely decision-action cycle, and effective battlefield procedures.

SECTION II SYNCHRONIZATION OF THE BATTLE SPACE

105. **General.** This section outlines the concept of battlefield synchronization and its importance for operations which may occur across the spectrum of conflict. Combined Operations demand careful synchronization to effect inter-theatre and intra-theatre logistics flow, mutual support, efficient use of all available resources, and the ultimate application of force to achieve the strategic purpose.

106. **Definition.** Synchronization is the ability to focus resources and activities to produce maximum relative combat power at the decisive time and place. Synchronization includes, but is not limited to, the massed effects of combat power (forces and fire) at the decisive point. Synchronization seeks to gain overwhelming combat power through the coordinated use of all available resources.

107. **Principles.**

- a. Synchronization usually requires explicit coordination among the various units and activities participating in any operation. By itself, however, such coordination is no guarantee of synchronization unless commanders first visualize the consequences to be produced and how they sequence activities to produce them. Synchronization first takes place within the mind of the commander who must clearly identify his vision for the conduct of the operation to his subordinate commanders and staffs.
- b. Synchronization of air, land, maritime, space and special operations, must occur across the commander's geographical area of operations which includes the air and space above. Three closely related sets of activities characterize operations within an Area of Operations - deep, close, and rear operations. Commanders must synchronize and fight deep, close, and rear actions simultaneously in a manner that appears to the enemy as one continuous operation against him. Synchronization of deep, close, and rear operations is a complex undertaking and requires a clear understanding of the commander's intent. Friendly forces must seek to attack the enemy simultaneously throughout the depth of the battlefield and mass both effects and forces when and where necessary to accomplish the mission. Deep, close and rear operations are discussed in more detail in para 108.
- c. Understanding the commander's intent is critical. The staff, guided by the mission statement and the commander's intent, use the decision making process, operational planning factors and tools such as intelligence preparation of the battlefield, combat service support capabilities, and combat support assets coordinated within a manoeuvre scheme, and develop a synchronized operational plan. Activities that should be considered by commanders and their staffs, communicated to the subordinates and used in the operational planning process, and where appropriate at the tactical level, are:
 - (1) Determine the mechanism for defeat; what is the enemy's "centre of gravity?"
 - (2) Determine decisive points.
 - (3) Provide the commander's intent to his staff and subordinate commanders.
 - (4) Establish and communicate the unity of purpose throughout the force.

- (5) Develop procedures for controlling tempo as a way to maintain initiative.
- (6) Think in terms of massing "effects" not units.
- (7) Understand the interaction of nation's capabilities as they contribute to synchronization.
- d. Synchronization rests on:
 - (1) Planning of operations before and during the action.
 - (2) Efficient battle procedure, particularly the issuing of orders in a timely manner.
 - (3) Strict adherence and enforcement of control measures and battle plans.
 - (4) Command and control of the actions.
- e. It therefore follows that in order for our synchronization to be more effective than the enemy's we need to establish, and maintain, a command and control capability which is more effective than the enemy's. Ensuring that this superior command and control capability is achieved and maintained is the rationale for the concept of Command and Control Warfare (C2W).

108. **Operational Framework.** At both the operational and tactical levels, operations are conducted to *find* the enemy, to *fix* him, thus depriving him of his freedom of action, and to *strike* him in order to bring about his defeat. In order to accomplish this, operations may well be simultaneous and should be closely integrated. They are also conducted within a framework of *deep*, *close* and *rear* operations. R

- a. **General.** The terms deep, close and rear are used to describe how these three operations relate to each other by function, by what they are to achieve, by geography or where they are to achieve it, and by time or when they are to be achieved. These three operations must be considered together and fought as a whole at each level of command from battlegroup upwards depending upon the scenario and situation. They require continuous and careful synchronization and ideally are conducted simultaneously because each will influence the other. Deep, close and rear operations also need to be integrated between levels of command because of the differences in scale and emphasis between formations of varying sizes and resources. While finding the enemy is a function common to all operations, fixing and attacking him may be achieved by either deep or close operations, according to the overall design for battle. In order to achieve concentration of force, one of them will be the main effort at any time. Rear operations will invariably protect and sustain the force while ensuring that freedom of action for future operations is maintained.
- b. **Deep Operations.** The purpose of deep operations is primarily to find and fix the enemy, keeping him from his objectives and constraining his freedom of action, thereby creating favourable conditions for close operations. They are usually conducted at long range and over a protracted timescale. Deep operations are essentially offensive in nature and may themselves lead to close combat. They are a means of restricting the enemy's ability to manoeuvre by focusing on his key vulnerabilities so that he is unable to bring his combat power to bear. It may be sufficient to delay him or to divert him from his main effort through

such means as barriers and deception measures although, increasingly, the range and lethality of modern weapons, tied to accurate and responsive acquisition systems, allow deep operations to contribute directly to attacking the enemy in addition to fixing him.

- c. **Close Operations.** The purpose of close operations is primarily to engage the enemy, using a variety of means producing results ranging from destruction to arrest, in order to eliminate a vital part of his combat power. Close operations will usually be conducted at short range and in an immediate timescale and are therefore concerned with the winning of current battles and engagements by forces in direct contact with the enemy. Through the employment of direct action against enemy combat power their effect is likely to be both immediate and tangible. They are not merely carried out by combat forces however, but include the activities of CS and CSS units operating in their support.
- d. **Rear Operations.** The purpose of rear operations is to ensure freedom of action by protecting the force, sustaining combat operations and retaining freedom of manoeuvre of uncommitted forces. They both increase the overall depth of operations and provide the resources to vary the tempo of operations. Although CSS activities are an important component, rear operations are much wider in scope and include such types of activity as:
 - (1) Assembly, movement and security of reserves or echelon forces.
 - (2) Redeployment of forces out of contact.
 - (3) Host Nation Support (HNS).
 - (4) Establishment and protection of secure operating bases.
 - (5) Establishment of lines of communication.
 - (6) Support for and protection of civilians and civilian installations.
 - (7) Civil-Military Cooperation (CIMIC), including cooperation with national authorities.

Rear operations control the provision of reinforcements and replacements, roulement, movement of equipment and personnel, reconstitution and the regeneration of forces.

- e. **Summary.** Deep, close and rear is principally a means of visualizing operations by function. Forces deployed forward may equally well be engaged in deep, close or rear operations. Similarly they may be operating at both long and short range depending on the activity occurring and the means being employed to carry it out. Close operations may, for example, be narrowly focused in a confined space or may span a considerable area in depth, width and height. The determining factor is the function that a force is fulfilling. Usually, deep operations involve *finding* and *fixing* and close operations are intended to fix and strike the enemy. Rear operations are concerned with supporting, sustaining and protecting the forces fulfilling these functions. All categories of forces can be involved in any of these operations. CSS units, for example, can conduct deep or close operations if the task they are performing supports and sustains combat or combat support forces in carrying out their role.

109. **Planning.**

- a. **General.** Synchronization within the operational plan should be considered under the General Tasks in Battle or Combat Functions. Commanders integrate and coordinate these functions to synchronize battle effects in time, space and purpose. Other functions (eg simultaneity, information operations) may be considered under specific circumstances. The standard combat functions are:
 - (1) Manoeuvre
 - (2) Fire Support
 - (3) Intelligence
 - (4) Mobility, Countermobility and Survivability (Protection)
 - (5) Air Defence
 - (6) Combat Service Support
 - (7) Command and Control
- b. **Manoeuvre.** The application of manoeuvre on the battlefield involves:
 - (1) The employment of forces on the battlefield through movement and direct fire, including direct fire systems (small arms, tank guns, and armed/attack helicopters).
 - (2) Planning, which includes both forces in contact and not in contact with the enemy.
 - (3) Determining windows of opportunity for commitment of exploitation and or reserve units.
 - (4) Seizing and retaining the initiative by controlling the introduction of enemy units at the forward line of friendly troops.
 - (5) Planning for covering forces, advance guard and reconnaissance elements.
- c. **Fire Support.** Fire support involves:
 - (1) The coordinated use of target acquisition data, indirect fire weapons, armed aircraft, and other lethal and non-lethal means against ground forces in support of manoeuvre force operations or coordinated simultaneous deep attack operations.
 - (2) Developing engagement criteria to support the commanders intent and his means or mechanism for defeating the enemy.
 - (3) The production of target lists, which include high value and high payoff targets.

- (4) Planning and integrating the use of electronic warfare support available to the commander.
- d. **Intelligence.** Intelligence considerations include:
 - (1) Functions that generate knowledge required by the commander about the enemy and the environment.
 - (2) Collecting information about the enemy regarding his intentions, capabilities, organizations, morale, weapon systems, vulnerabilities and other relevant characteristics.
 - (3) Planning support of deep operations - operations to the depth of friendly lethal and non lethal systems.
 - (4) Synchronization of intelligence resources which must be planned at all levels to ensure proper support to all operations.
 - (5) Analysing collected and known information to produce intelligence, threat assessments, and friendly vulnerability studies.
 - (6) Dissemination and presentation of relevant intelligence and information to the soldier for timely decision making.
- e. **Mobility, Countermobility and Survivability (Protection).** Mobility, countermobility and survivability considerations include:
 - (1) Mobility tasks which permit freedom of movement relative to the enemy while retaining the ability to fulfil the primary mission.
 - (2) Survivability tasks which protect friendly forces from the effects of enemy weapon systems and natural occurrences. It includes active and passive security measures such as hardening of battle positions and facilities, OPSEC, dispersion of forces and materiel, deception etc.
 - (3) Mobility and survivability planning which ensures that support for enhancing friendly forces mobility and the effects of friendly weapon systems are integrated into each operation.
- f. **Air Defence.** Air defence is a vital element in ensuring the mobility and survivability of friendly forces. It includes consideration of:
 - (1) Tactical air defense which is all measures designed to nullify or reduce the effectiveness of attack by hostile aircraft after they are airborne.
 - (2) Evaluating the threat and determining rules of engagement (ROE).
 - (3) Determining attack means; lethal or non-lethal.

- g. **Combat Service Support.** CSS considerations include:
- (1) Support and assistance provided to sustain forces, primarily in the areas of logistics, personnel services, and medical services.
 - (2) Determining how to man, arm, fuel, maintain, and move the force in combat operations.
 - (3) Anticipating force requirements so the right support can be pushed forward. Pre-positioning critical supplies, major pieces of equipment and replacement crews prior to high-tempo operations.
 - (4) The provision of HNS.
- h. **Command and Control.** Command and control considerations include:
- (1) Planning for all C2 functions that are necessary to execute the mission.
 - (2) Responsibility for orchestrating the synchronization process.
 - (3) An efficient system of control and a working system of communications to ensure synchronization.
 - (4) Determining how to protect friendly C2 capability and how to reduce that of the enemy in order to contribute both to the commander's overall operational plan and to ensure effective command and control of friendly forces.

CHAPTER 2

COMBAT FUNCTIONS

INTRODUCTION

201. **General.** NATO defines seven combat functions: manoeuvre, fire support, intelligence, protection (mobility, counter-mobility and survivability), air defence, combat service support and command and control. Armies seek to integrate and apply these functions as overwhelming combat power to fix and strike the enemy. Combat power is the total means of destructive and/or disruptive force that a military unit or formation can apply against an opponent at a given time. To produce the desired effect on the enemy, combat power is applied through an inherent requirement to find the enemy in combination with two dynamic forces of fixing and striking him. Armies pre-empt, dislocate and disrupt by fixing and striking the enemy, both on the physical and moral planes of the conflict.

SECTION I MANOEUVRE

202. **General.** Manoeuvre is the employment of forces through movement in combination with speed, firepower, or fire potential, to achieve a position of advantage in respect to the enemy in order to achieve the mission. It is the means of concentrating land forces at the decisive point to pre-empt, dislocate or disrupt enemy cohesion through surprise, psychological momentum and moral dominance. While mainly physical, manoeuvre can also have moral effects such as uncertainty, confusion and paralysis. It involves trade off: speed against security, breadth against depth, concentration against dispersion. In this regard, a degree of risk taking and audacity is implicit.

203. **Manoeuvre Functions.** Within the overall framework of operations, manoeuvre forces are required to conduct:

- a. **Deep Operations.** Deep Operations are normally those against the enemy's forces or resources not currently engaged in the close fight. They prevent the enemy from using his resources where and when he wants to on the battlefield. Deep Operations are not necessarily a function of geographical depth, but rather a function of what forces are being engaged and the intent of the operations. The integrated application of firepower, manoeuvre and information operations can be combined to execute Deep Operations. The commander normally conducts Deep Operations using both integral manoeuvre assets as well as any additional forces allocated to him for specific tasks in order to set conditions for future Close Operations.
- b. **Close Operations.** Close Operations are primarily concerned with striking the enemy, although their purpose also includes fixing selected enemy forces in order to facilitate striking actions by other components of the force. Close Operations are usually the corps and division current battle and include the engagements fought by brigades and battalions. The time dimension of the Close Operations is immediate, although they are important in setting the conditions for the future operations.
- c. **Rear Operations.** Rear operations assist in providing freedom of action and continuity of operations. They must be focussed to support the commander's intent. The responsibility

for decisions affecting Rear Operations must remain with the commander, particularly given the potentially critical effect that the outcome of Rear Operations may have on Close and Deep operations. Forces within the rear area of operations may need to conduct battles and engagements to eliminate an enemy threat. Dedicated manoeuvre may be required for the Rear Operations.

204. **Combat Forces.**

- a. **General.** Combat forces are those forces, which use fire and movement to engage the enemy with direct fire weapon systems, as distinguished from those forces, which engage the enemy with indirect fires or otherwise provide combat support to manoeuvre forces. Combat forces are primarily armoured (armour and armoured/mechanized infantry), non-armoured (infantry, airmobile infantry), reconnaissance (air and ground), Special Operations Forces (SOF), and armed or attack helicopters.
- b. **Armoured Forces.** Armoured forces include heavy (tank) and light armoured forces.
 - (1) Heavy armoured forces are primarily offensive in nature. The mobility, firepower, protection from enemy fire and shock effect make them an excellent weapon system for penetrating enemy defences, exploiting the success of offensive operations, deep strikes in the enemy's rear areas, and pursuing defeated forces. Armoured units can also blunt enemy attacks and launch counterattacks as part of defensive operations. Tanks can destroy enemy armoured vehicles, infantry units, anti-tank guided missile units, and under certain conditions effectively engage helicopters in flight.
 - (2) Light armoured units can be used in a variety of environments. Tactical missions include providing security, reconnaissance, and anti-armour firepower support to non-armoured or airmobile units. Light armoured units can conduct standard armoured operations including the destruction of enemy forces in coordination with other arms, but their lack of firepower and protection may prevent effective intimate support of infantry and engagement of enemy heavy armour.
 - (3) Armoured infantry units have the same mobility as armour forces, but less firepower and protection. When equipped with infantry fighting vehicles, the armoured infantry can accompany tanks in mounted assaults, but commanders must be careful in determining if, when, and where infantrymen must dismount to accomplish their mission. In the attack, armoured infantry can act as fixing forces. In the defence, they act as pivot points for manoeuvring tank-heavy forces. Additionally armoured infantry units equipped with long range anti-armour missiles can be used to provide over watching fire and assist in delay missions in combined arms formations. Armoured infantry and armoured units should act as a team to defeat enemy armoured forces in a variety of environments.
- c. **Non-armoured Forces.** Non armoured forces include dismounted and airmobile (air-assault and airborne) infantry.

- (1) Dismounted infantry units can operate in most terrain and weather and are capable of performing a number of missions across the spectrum of conflict, especially operations other than war. Because of their rapid deployability they may be the dominant arm in rapidly developing operations. In such cases, they can take the initiative early, seize and hold ground, and mass fire to stop an enemy in restrictive terrain. Dismounted infantry operates primarily at night or during periods of limited visibility. They are especially useful for operations in difficult terrain and urban or built-up areas. They can infiltrate and can move rapidly to the enemy rear to accomplish special missions or in conjunction with armoured forces. Dismounted infantry units achieve decisive results through the employment of organic and supporting forces and weapons systems.
 - (2) Airmobile forces have the greatest tactical and operational-level mobility. Their deployability and significant anti-armour capability, makes them particularly well suited as an early deploying force in contingency operations against heavy forces. They train and fight as a team in combination with airmobile artillery and attack and transport aviation and are capable of penetrating deep into enemy territory to cut lines of communication (LOCs) seize airfields, destroy C2 nodes, block reinforcing units, or seize key terrain.
 - (3) Airborne forces are capable of being deployed over great distances. These units can be projected to virtually any objective under most weather conditions. Commanders must consider that deployment at great distances may preclude airborne forces from being augmented with additional anti-armour weapons systems. Once on the ground their capabilities and lethality are similar to other infantry units.
 - (4) Mountain Infantry Troops fight like dismounted infantry. They are equipped and organised for close combat especially for mountain areas and in difficult terrain under extreme cold or arctic weather conditions.
- d. **Reconnaissance (Recce).** The basic missions of Recce units are reconnaissance, security, and economy of force. Recce units are capable of finding the enemy, by stealth or by fighting for information based on the mission and the organization of the recce force, and developing the situation thereby providing the commander with reaction time and security. Recce units can delay an attacking enemy as well as assisting in a withdrawal.
- e. **Armed or Attack Helicopters (AH).** During either offensive or defensive combat operations, helicopters perform the following combat missions: attack and air combat. AH perform missions throughout the close, deep, and rear areas of operation.
- (1) **Attack.** The firepower, agility, and speed of helicopters permits AH forces to close with and defeat a wide range of enemy forces. AH are ideally suited for rapid reaction in close, deep, or rear operations. AH units/formations provide highly manoeuvrable precision guided and direct firepower. The speed and manoeuvrability of helicopter units with their use of natural cover and speed compensate for their vulnerabilities. They are ideally suited for situations in which rapid reaction time or depths of attack are important or terrain restricts ground forces. AH can be used for the following tasks:

- (a) Anti-armour.
- (b) Air combat.
- (c) Aerial security.
- (d) Joint Air Assault Team (JAAT) operations.
- (e) Fire support.
- (f) Anti-personnel.
- (g) Suppression of Enemy Air Defences (SEAD).

- (2) **Air Combat.** Helicopters contribute to air defence and joint counter air efforts through air combat operations. Air combat operations are planned and executed to protect ground manoeuvre operations; they can be offensive or defensive. Air combat operations must support the force commander's overall scheme of manoeuvre. In these operations, air combat is part of the forward area air defence system. Ground or air manoeuvre force commanders may control air combat operations.

205. **Fixed Wing Air Transport.** At the tactical level, air transport includes the use of aircraft for:

- a. Airborne operations.
- b. CSS operations.
- c. Casualty evacuation.

206. **Utility and Transport Helicopter Operations.** Transport Helicopters (TH) contribute significantly to Deep, Close and Rear War-fighting and Peace Support Operations (PSO). As utilitarian and flexible assets, they can, singly or en masse, be used to move anything that is physically capable of being carried and/or anyone who requires to move, at every phase of every campaign, by day or night and in most weathers. As manoeuvre enablers and force multipliers, transport helicopters are an indispensable element of the combined arms ORBAT. Roles for utility and transport helicopters include:

- a. Special forces operations such as Long Range Patrol (LRP) insertion/extraction.
- b. Airmobile operations (including raids and seizure of key terrain or assets).
- c. The deployment of Forward Arming and Refuelling Points (FARPs) to extend the range, timescale or tempo of Attack Helicopters operations.
- d. Provision of aerial command posts.
- e. Support to Rear Area Security forces.
- f. Support to Engineer operations.
- g. Support to Movement and Logistic operations.

SECTION II FIRE SUPPORT

207. **General.** Fire support is the collective and coordinated use of the fire of land and sea based indirect fire systems, armed aircraft, aviation, electronic warfare and non-lethal munitions against ground targets to support combat operations at both the operational and tactical levels. Fire support is the integration of fire and effects to delay disrupt or destroy enemy forces, combat functions, and facilities in pursuit of operational or tactical objectives.

208. **Planning Considerations.**

- a. **Acquiring the Target.** To be effective, weapon systems must be linked to an appropriate sensor to provide both target acquisition and damage assessment. There is a fundamental requirement to link such systems to Intelligence Surveillance, Target Acquisition and Reconnaissance (ISTAR) systems. Once acquired, the target can then be engaged in order to achieve the desired results. The acquisition of targets and their subsequent attack - ISTAR and Strike - is a process, which requires detailed coordination so that, in combination with the movement of combat forces, it produces the desired effect on the enemy. The manoeuvre commander in consultation with the relevant supporting arms commander makes guidance and direction as to target selection. The supporting arms commander then matches the appropriate response to the selected target, taking account of operational requirements and capabilities. This procedure is known as the 'Targeting Process' and is fundamental to the successful application of fire support. It is discussed in more detail in section VII of this chapter.
- b. **Engaging the Target.** Once the system has been selected and the orders given, the engagement takes place. Depending on the task it may be either a lethal (eg conventional land, sea and air delivered munitions) or non-lethal (eg exploitation of the electro-magnetic spectrum - see Chap 3, Sect II, EW) engagement.
- c. **Fire Support Coordination Measures (FSCM).** In order to enhance the chances of success, the firepower provided by fire support systems must be fully integrated into the operational plan. This includes fire support from other components of the joint force, in particular air delivered firepower. FSCMs are designed to provide safeguards for friendly forces and at the same time facilitate the rapid engagement of targets. All FSCMs are established by the land or amphibious commander. FSCMs fall into two broad categories, permissive and restrictive:
 - (1) **Permissive Measures.** With the establishment of a permissive measure, no further coordination is required for the engagement of targets affected by the measure. In essence, the primary purpose of permissive measures is to facilitate the attack of targets. Permissive measures include Fire Support Safety Lines (FSSL) and Free Fire Area (See Glossary for definitions).
 - (2) **Restrictive Measures.** The establishment of a restrictive measure imposes certain requirements for specific coordination prior to the engagement of those targets affected by the measure. An example of a restrictive measure is the Fire Support Coordination Line (FSCL) (See Glossary for definition). The primary purpose of restrictive measures is, therefore, to provide safeguards to friendly forces.

- (3) **FSCL.** The FSCL is the principle FSCM for air-land operations. Short of the FSCL, the manoeuvre commander controls all air-to-surface attacks, either through positive control or procedural measures. Unless in exceptional circumstances, forces attacking targets beyond the FSCL must coordinate with all affected commanders, so as to avoid fratricide and to harmonise joint objectives. This coordination is achieved through inter-component liaison teams and joint targeting bodies, and for air operations will be reflected in the Air Tasking Order (ATO). Positioning and movement of the FSCL are the responsibility of the land (or amphibious) force commander but are critical to responsive, effective air operations, and must be coordinated with the appropriate air commander. Advice on factors affecting positioning the FSCL is in AJP-3.3.2 (Air Interdiction and Close Air Support).

209. **Fire Support Function.** Within the overall framework of operations, Fire Support units are required to contribute to:

- a. **Deep Operations.** The commander normally conducts deep operations using both integral Fire Support assets as well as any additional forces allocated to him for specific tasks. Deep operations can degrade the enemy's firepower, disrupt his command and control, destroy his logistic base and break his morale and thus the enemy's cohesion. While Fire Support plays an essential role in the conduct of deep operations, the integrated application of firepower and manoeuvre make a deep attack capability effective. Success is founded on the synchronization of all assets at all echelons. The range and lethality of modern weapons, combined with accurate and responsive acquisition systems, also allows deep operations to contribute directly to attacking the enemy in addition to fixing him. The principal combat support means of carrying out interdiction will be indirect fire and Air Interdiction (AI).
- b. **Close Operations.**
- (1) The provision of Fire Support to close operations entails both the allocation of assets to subordinate formations to enhance their integral capability and general support to operations within the commander's overall plan. The allocation of resources must be balanced against the requirement to concentrate for maximum effect and to retain the ability to switch critical assets as the operation develops and the commander's priorities change. Indeed, it may be preferable to hold Fire Support assets at a high level and to allocate them strictly in accordance with these priorities and for limited periods and/or specific missions only. This enables the commander to remain flexible and exert a decisive influence on the outcome of operations, an ability that might be diminished by the allocation of resources to subordinate formations.
- (2) Forces engaged in close operations need to consider the requirement to employ resources in an interdiction capacity. The use of Fire Support forces, such as artillery, in a fixing role serves to constrain the enemy's freedom of action and his ability to reinforce, thus making the terms on which close operations are conducted more predictable, and the outcome more certain. This does not mean, however, a greater reliance on indirect rather than direct fire; each has a role and one is not a substitute for the other.

- (3) Close operations may well not occur in adjacent areas and, consequently, gaps may result. If sufficient combat forces are not available to cover these gaps then combat support forces may be employed to provide surveillance, firepower and protection.
 - (4) Commanders should always seek to retain a reserve to cater for the unexpected. The versatility of Fire Support assets, in particular their range, speed of reaction and their ability to both concentrate and switch fire, can present a viable alternative to the use of combat forces in performing some reserve tasks by the application or threat of the application of fire.
- c. **Rear Operations.** As enemy rear operations are a target for our deep operations, so ours are a target for the enemy. Protection is therefore an important part of rear operations and a balance must be struck between active and passive measures. Active measures include the use of Fire Support forces in neutralising or destroying enemy forces capable of deep operations, as well as the provision of forces to protect likely targets. The provision of Fire Support forces to rear operations depends on the commander's mission and the resources available to him. As with close operations, he must balance the allocation of resources against the requirement to concentrate for maximum effect and the ability to switch assets as the operation is conducted.

210. **Fire Support.**

- a. **Artillery.** Artillery contributes to target acquisition and indirect fire across the whole battlefield:
- (1) **Field Artillery.** Field artillery provides close support to combat forces, counter battery fire, SEAD and fire support for deep operations as required, and will increasingly be able to deliver decisive force against critical force elements throughout the battlespace. This fire suppresses, neutralises, destroys or harasses enemy attack formations or defences; obscures the vision of the enemy or otherwise inhibits his ability to acquire and attack friendly targets. It can also destroy enemy targets deep in his rear with long range rocket or missile fire. Field artillery can be rapidly shifted, by day and night, in all types of weather, to mass fire at the critical time and place.
 - (2) **Mortars.** Mortars are not normally held above infantry battalion level and are considered to be their integral fire support. Their fire nevertheless needs to be integrated with the other fire support resources available to the battalion.
- b. **Naval Surface Fire Support (AArtyP-1).** Some land operations may be supported by sea based indirect fire systems including TLAM. Field artillery has the added responsibility of observing and controlling NGS. Specialist NGS coordinators may be deployed for this purpose.
- c. **Helicopters.** Helicopters provide a wide range of armed and unarmed reconnaissance and security capabilities. They are often essential in detecting and identifying enemy forces throughout the battlefield and provide the commander with real-time battlefield information. AH are designed to employ various weapons to attack and destroy enemy targets. AH

have the firepower, reaction time, mobility and ability to engage targets with precision while providing the formation commander with a responsive and lethal deep strike capability. They can be employed to defeat large concentrations of enemy armour or any other designated high payoff targets, especially when synchronized with CAS, artillery and EW.

- d. **Air.** Fixed-wing air power offers a wide variety of weaponry and effects, such as precision, defeat of armour and penetration of hardened targets. It also offers reach, surprise and concentration of force, and the ability to engage many targets simultaneously. Air power can be flexible and responsive, but scarcity of key assets and theatre-wide responsibilities necessitate most fixed-wing air operations being centrally controlled at air component commander level. As a result, assignment of air support to land component operations normally requires a significant lead time. Responsive air support can always be provided at very short notice, particularly in cases of operational urgency: however, its effectiveness will increase with the amount of notice given. The 2 principle forms of air support to land operations are Air Interdiction (AI) and Close Air Support (CAS).
- (1) **AI.** AI is "Air Operations conducted to destroy, neutralise or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required" (AAP-6). When synchronised with land manoeuvre operations AI can create irreconcilable dilemmas for an adversary: responding to the threat posed by manoeuvre will expose him to AI: protecting himself from AI will make him vulnerable to manoeuvre. Land commanders should specify their AI needs - in terms of targets, required effects, priorities and synchronization requirements - in time for consideration by the appropriate joint targeting bodies. Short-notice requests for AI may be forwarded through inter-component liaison teams, but the detailed planning needed for some types of AI target may prevent their acceptance by the air component.
- (2) **CAS.** CAS is "air action against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces" (AAP-6). CAS aircraft may be held at varying degrees of readiness with different weapon loads for rapid, flexible use and can provide an immediate effect in a close battle, either in defence or offence. 'Detailed integration' is achieved through positive control of CAS by a qualified Forward Air Controller (FAC). The land component commander decides whether CAS procedures are required and specifies those emergency circumstances when an unqualified controller may direct CAS. Commanders should forecast their CAS requirements within the timescale for assignment of air support ('Pre-Planned CAS'). In case of urgency 'Immediate CAS' may be requested through the inter-component liaison teams, and the air commander will seek to divert aircraft from other tasks to satisfy the need.
- e. **Non-lethal Weapons (NLW).** NLW are weapons designed and employed to incapacitate personnel or materiel while minimizing fatalities, permanent injury to personnel and undesired damage to property and the environment. Non-lethal effects can be delivered by a variety of attack resources such as gun and rocket artillery and aircraft.

SECTION III INTELLIGENCE**211. General.**

- a. The aim of this section is to outline the vital part that intelligence plays in combat and to examine intelligence activities in the combat zone. More detailed guidance on the doctrine and terminology of intelligence within the NATO alliance can be found in AIntP-1 and STANAGs 2433, 2149, and 2844.
- b. Commanders at all levels must regard intelligence as inseparable from operations since it provides vital parts of the basis for making decisions, planning operations, and fighting the battle. The staff, particularly the G2 staff, must be capable of assessing the information available and providing the intelligence and advice that is relevant to the commander's requirements. However, it remains a command responsibility to provide proper direction to the intelligence staff - Intelligence is a function of command.

212. Intelligence Functions.

- a. In broad military terms, intelligence is the sum of our knowledge and understanding of the activities, capabilities, and intentions of an actual or potential enemy, the environment, and the weather.
- b. In addition to directing their intelligence and security activities, commanders must ensure that there is always the closest synchronization between the Deep, Close and Rear Operations staff and the intelligence staff
- c. A commander will usually be concerned about a number of specific areas in terms of influence, responsibility and interest:
 - (1) **Area of Influence.** The geographical area within which a commander is directly capable of influencing Deep, Close and Rear Operations by manoeuvre or with fire support systems normally under his command or control.
 - (2) **Area of Intelligence Responsibility.** The area allocated to a commander in which he is responsible for the provision of intelligence within the means at his disposal. The efforts of his intelligence staff will be devoted mainly to this area.
 - (3) **Area of Intelligence Interest.** That area of concern to the Commander, including the area of influence, areas adjacent thereto, and extending into enemy territory to the objectives of current or planned operations. This area also includes areas occupied by enemy forces that could jeopardize the accomplishment of the mission. In order to provide the necessary information and intelligence, the intelligence staff will invariably have to request it from higher or flanking units and formations.
- d. It is not possible to predict where, how, and in what circumstances NATO forces will be committed. Therefore, there will be many different levels of command to be deployed, different operational areas, roles, ground and enemy. This, in turn will require great flexibility in thought, concept, Area of Intelligence, Interest, Intelligence, and Responsibility and in particular, the allocation of intelligence collection assets and analytic staff.

- e. Information and intelligence about the enemy will seldom, if ever, be complete or up to date, but a commander must be prepared to act on what is available and ensure that his plans are sufficiently flexible to permit rapid and effective modification as a result of fresh intelligence.

213. **Information and Intelligence.**

- a. In intelligence work, the difference between information and intelligence must be clearly understood. Information is unprocessed data of every description, which may be used in the production of intelligence. Intelligence on the other hand is the product obtained from processing this information and converting it to intelligence by collation, evaluation, analysis, integration, and interpretation.
- b. A great deal in intelligence is acquired in peacetime from many overt and covert sources. The basic intelligence required by NATO is largely provided by the intelligence systems of individual member nations, often in response to requests from NATO staffs. This basic intelligence is the background and general reference material for operations in war whilst current intelligence reflects and updates the current situation from strategic through to the tactical level.

214. **The Intelligence Cycle.**

- a. **General.** The start point for the entire intelligence process is for the commander to set out his requirements for the intelligence he needs to make his plan and execute it. He will need to augment and amend these requirements as his plan develops. This is a continuous, cyclical process, which must receive the commander's personal attention. His intelligence staff converts this requirement into collection requirements, which are distributed to obtain either processed intelligence or raw information, which the staff can fuse into assessed intelligence for the commander. The cycle can therefore, be divided into four principal elements.
 - (1) Direction.
 - (2) Collection.
 - (3) Processing (In the US, processing is divided into two steps – processing and production).
 - (4) Dissemination.
- b. **Requirements.** The commander's intelligence requirements must be clearly understood by all members of his staff in order that unforeseen opportunities to task and exploit sources, which may support his requirements, can be seized. To be effective, intelligence must have the specific aim of providing the commander with what he needs. In order to provide an effective service the intelligence staff must be properly directed and its objectives defined.
- c. **The Intelligence Estimate.** Once the collection and processing has been sufficiently carried out to meet the commander's requirements and a clear picture of the enemy's

situation and capabilities has been obtained; the intelligence estimate can be completed. The intelligence estimate is an assessment of an enemy, potential enemy or foreign force capability and intention and probable courses of action. Some nations may complement this by the Intelligence Preparation of the Battlefield (IPB) process, which can help the commander to identify critical battlefield decision points and to refine his intelligence requirements. Details of the IPB process are contained in AIntP-1, Edition 2.

- d. **Dissemination.** The dissemination of intelligence to users applies not only to the finished product, but also to the passage of information and partially processed intelligence between sources, agencies, and staffs.

215. **Combat Intelligence.** A commander and his staff require intelligence before and during the battle in order to both plan and conduct operations. This is known as combat intelligence. During operations, much of the information flowing in intelligence channels will be in the form of reports from forward troops. In many cases, such combat information needs to be exploited immediately. Therefore, it must be transmitted swiftly to those who need it and, at the same time, sent upward where its intelligence value may also be exploited.

216. **Requirements and Resources.**

- a. All available sources and agencies, including national sources, must be used to the greatest extent possible, for collecting information. The flexibility and responsiveness of modern intelligence collection methods and systems enable commanders to see the battlefield in depth, and in near real time. Boundaries or national restrictions between allied units and formations should not inhibit the collection and dissemination of information and intelligence.
- b. As the battlefield is viewed by commanders at each level of command with a slightly different perspective, so do their intelligence requirements and the information requirements of their staff vary:
 - (1) At low levels, commanders need accurate and timely intelligence to engage the enemy and his fire support elements, particularly with friendly direct fire weapons. Most of this intelligence will come from line-of-sight observations.
 - (2) At formation level, the commander's intelligence requirement will be dictated by his need to plan further in advance and by the greater variety of ranges of weapons available to him. Requirements will be expanded to include the use of indirect sources to detect enemy movement in-depth, reinforcements and reserves, assembly areas, artillery and air defense locations, headquarters and any other significant tactical indicators. Some of this intelligence will come from higher and flanking formations.
 - (3) At higher levels, the commanders will place greater emphasis on determining the enemy's capabilities and/or intentions in order to plan future operations and deploy reserves. These may be indicated by the density and the direction of movement of enemy elements, including both forces in contact and in depth, to the limit of his area of interest. The commander at these levels controls and directs surveillance resources with a greater range and coverage and he can also call upon national resources.

- c. **Information Handling.** The information flow off the battlefield will demand a corresponding speed of processing; an automatic data processing capability will greatly accelerate processing and retrieval. The significance of a piece of information may vary as it passes up the chain of command, because the intelligence background against which it is interpreted will become wider. However, there must always be a danger that intelligence staffs at the higher levels will be unable to deal adequately with the information flow. There must be a system of filtering at the lower levels to ensure that material going up the chain of command is strictly relevant. The commander's intelligence requirements should be well known at all levels, so ensuring that valuable material is not filtered out.

217. **Counter-Intelligence.** Those activities of counter-intelligence relating to the protective measures that must be taken by a commander to ensure the security of his force are detailed in Chapter 3, Section III Security and Protection.

218. **Intelligence, Surveillance, Target Acquisition, and Reconnaissance, (ISTAR).** These activities are conducted by nations during peace, crisis, and war. When effectively integrated, individual ISTAR activities will create an intelligence synergy and thus, provide a dynamic and continuing process of collection, processing and dissemination. National requirements, doctrine, political constraints and agreement between allies determine the level, intensity, and means, by which these activities take place.

- a. **Concept.** The ability to obtain quickly information on the composition, deployment activities and capabilities of an enemy force, together with terrain and meteorological data, is essential to the successful prosecution of land combat operations. With appropriate processing this information will yield valuable intelligence and target information with which the commander can allocate force levels and resources, determine target priorities and establish the right conditions before commencing combat operations. The component parts of ISTAR are closely linked and often overlap. Together they involve:
 - (1) **Area Surveillance.** Continual area surveillance provides for the collection of general information on an enemy or potential enemy. It may be used to:
 - (a) Provide basic information on deployments, activity levels, capabilities, and overall intentions.
 - (b) Cue reconnaissance and target acquisition resources on any requirement to investigate specific items or to obtain more detailed data/information on a particular observation.
 - (c) Provide limited security to friendly forces through early warning of enemy activity within gaps, on exposed flanks or in rear areas.
 - (d) Assist in initial recognition and identification.
 - (2) **Reconnaissance in Depth.** Reconnaissance in depth aims to provide detailed information in areas beyond the range of direct fire weapons. It can be initiated as the result of area surveillance or by intelligence deductions. It may involve:

- (a) The identification of known or suspected enemy forces including composition and activities.
 - (b) The acquisition of targets for air, aviation, and indirect weapon systems.
 - (c) The location and tracking of specifically targeted enemy units, elements, or activities.
 - (d) The confirmation of terrain features and ground conditions.
- (3) **Combat Reconnaissance.** Combat reconnaissance satisfies the requirements for both combat information and target acquisition essential for troops in or near contact with the enemy.
- (4) **Target Acquisition.** Target acquisition is the process of providing detailed information and locating enemy forces with sufficient accuracy to enable weapon systems to engage, suppress, or destroy those elements selected as targets. It includes:
- (a) **Target Acquisition For Direct Fire Weapons** – normally associated with a specific weapon, such a system provides essential combat information on an enemy that has already been detected, located, and may now be engaged.
 - (b) **Target Acquisition For Indirect Fire Weapons** – normally a data or information collection means operating beyond the line of sight of friendly forces and providing information to one or more indirect weapon systems.
- b. **Principles of Employment.**
- (1) The provision of information by ISTAR systems available to a commander should be controlled and coordinated at the highest level practicable in order to ensure economy of effort in covering critical areas. Some overlap will, however, be built into a surveillance plan to provide confirmation, avoid deception and defeat enemy OPSEC measures.
- (2) ISTAR systems employed should complement each other in terms of:
- (a) Space – to ensure all areas of interest are adequately covered, enabling the detection of enemy signatures by the use of complementary systems.
 - (b) Time – to ensure constant coverage.
 - (c) Interoperability – wherever possible.
 - (d) Variety – different disciplines, such as HUMINT, IMINT, SIGINT, and ACINT, to ensure full coverage despite enemy OPSEC measures.
- (3) Real-time and near real-time ISTAR systems must be closely linked to retaliatory weapon systems to:

- (a) Ensure initial weapon system effectiveness.
 - (b) Provide post strike analysis.
 - (c) Avoid duplication of tasking of weapon systems.
 - (d) Allow speedy re-tasking of ISTAR systems to find new targets.
- (4) ISTAR systems must be intimately linked with the intelligence system/cycle to ensure that maximum benefit is derived from information provided.
 - (5) Processing and dissemination systems associated with ISTAR assets must provide the best possible product in a timely manner and in a readily usable format.
 - (6) ISTAR systems must be tasked in such a manner as to emphasize particular strengths (such as the ability to provide real-time or near real-time information) while minimizing potential weaknesses (such as vulnerability to some enemy countermeasures).
 - (7) ISTAR systems must be provided an appropriate degree of security and protection in order to ensure their survivability and efficient means.
 - (8) Whenever possible, a tasking authority should ensure that one or more ISTAR systems retain a short response time capability to provide for unforeseen tasking or to confirm or refine information provided by other systems or means.

c. **Planning and Execution.**

- (1) The basis for the effective employment of any formation's ISTAR assets is a comprehensive collection plan. Prior to issuing any tasking a commander and his staff must:
 - (a) Analyze and validate the requirement to conduct the ISTAR activity under consideration.
 - (b) Determine the priority of the requirement.
 - (c) Review all ISTAR assets available and select the most appropriate.
 - (d) Request the information and intelligence required, with the appropriate degree of priority, from superior and neighbouring formations for areas beyond the Area of Intelligence Responsibility.
- (2) Once the requirement for a ISTAR tasking has been validated and approved, one or more collection systems must be tasked. For collection from outside the formation AIR and from agencies not under command, a request must be made through the superior headquarters. Agencies may include:

- (a) **Ground Systems.** Passive, active, or hybrid (passive until triggered).
 - (b) **Air Systems.** Passive or active.
 - (c) **Satellite/Space Systems.**
- (3) Rapid part processing, initial assessments and full intelligence processing have, with advances in technology, become integral parts of any ISTAR activity. The inherent processing capabilities of certain ISTAR assets are such that valuable information can be derived from the system as it conducts its mission. Appropriate provision should, therefore, be made for the timely dissemination of both the unprocessed combat information obtained and also the final processed intelligence product.
- (4) Once an ISTAR task has been completed the results achieved must be assessed against the original requirement as stated in the collection plan. A decision on whether the requirement has been met or is no longer valid must be made. The plan is then updated and further staff action is initiated, if appropriate.
- (5) Notwithstanding the above, the intelligence cycle is a dynamic and continual process. The intelligence requirement and relative priorities will be constantly changing and need to be reviewed regularly.

219. **Air Recce and Surveillance.** The products of Theatre level air reconnaissance missions are generally available at lower levels of command and provide a useful supplement to the product of integral reconnaissance assets. However, Theatre controlled assets cannot be fully responsive to the needs of commanders at lower levels. Where integral aerial surveillance platforms are available to formation commanders, these can provide important intelligence and targeting information in almost all weather conditions.

SECTION IV MOBILITY, COUNTERMOBILITY AND SURVIVABILITY (PROTECTION)

220. **General.** Mobility, Countermobility and Survivability are the essential elements of Protection. The conservation of a formation's fighting power is the aim of protection. It is achieved through the coordination of the seven combat functions to identify the enemy's intention and destroy him before a decisive engagement occurs. During battle procedure a commander's priority concern must be the protection of his forces throughout all stages of an operation from preparation, to deployment, through combat to redeployment. The measures a commander can use to ensure the protection of his force include situational awareness, counter-mobility, survivability, NBC defence, air defence and tactical security. Individual protection measures will not eliminate vulnerabilities on the battlefield, but taken together can limit personnel and equipment losses by reducing the exposure to detection, acquisition, targeting and engagement.

221. **Protection Functions.** Active and passive measures are ordered by a commander to enhance protection such that his force remains viable and functional. Taken together protection efforts ensure that maximum combat power remains available thereby maintaining freedom of action, achieving the ultimate aim mission success. The main protection functions are:

- a. Mobility.
- b. Counter-mobility.
- c. Survivability.
- d. Security.
- e. NBC Defence.

222. **Engineers.**

- a. **General.** Formation and units at all levels require engineer support. Since the execution of engineer tasks requires the judicious deployment and control of men, equipment and materials, the most economical use of engineers must always be sought. Whilst the decision remains that of the tactical commander, the engineer commander must advise on the correct mix of engineer support to formations or units, as well as the engineer material to accomplish the mission. This allocation will be altered as priorities change and tasks progress. The command relationship between engineers and the formations or units they support will depend on the nature of the mission and must be clearly stated. Scarcity of engineer units may require other arms units to execute simple engineer tasks. The main roles of engineers are:
 - (1) Mobility support
 - (2) Countermobility support
 - (3) Survivability support.

- (4) General engineer support.

b. **Mobility.**

- (1) By acting to ensure that mobility is maintained a commander can enhance the protection of his forces. This factor dictates the requirement to position suitable engineer resources well forward in the order of march to ensure that obstacles can be breached and routes repaired and maintained. By so doing, the tempo and momentum of the operation can be preserved without forces becoming bunched and vulnerable to enemy firepower. The maintenance of mobility in the face of obstacles is dependant on:
- (a) An early assessment of the likelihood of obstacles.
 - (b) Deployment of the force in an appropriate manner in order to overcome likely obstacles speedily.
 - (c) Early detection and reconnaissance of obstacles.
 - (d) Effective drills and procedures.
- (2) The main engineer mobility tasks are:
- (a) Gap crossing - including water and dry gaps.
 - (b) Countermine operations - the detection, reconnaissance, marking, bypassing, breaching and clearance of mined areas.
 - (c) Counter obstacle operations - the breaching, bypassing or reduction of obstacles.
 - (d) Routes - Developing and improving routes for tactical movement.
 - (e) Helicopters and tactical aircraft - tasks may include the construction, repair and maintenance of forward airstrips and the preparation of landing areas.

c. **Countermobility.**

- (1) Countermobility tasks require careful planning and must be fully incorporated into the operational plan. Although the planning should be carried out by the G3 staff it must be done in consultation with the engineer commander, to ensure the most advantageous use of the terrain in the locating and emplacing of obstacles zones and belts to ensure the appropriate use of scatterable mines.
- (2) Countermobility tasks involve the creation of obstacles such as minefields, demolition obstacles or constructed obstacles. Creating combined obstacles can increase the effectiveness of obstacles.

d. **Survivability.**

- (1) Survivability includes all aspects of protecting personnel, weapons and equipment and may include deception measures. Forces are responsible for their own survivability, though engineers will provide support within the limits of available resources and the priorities of the commander. Engineer operations must be planned to enhance the security of the operational plan.
- (2) The main engineer survivability tasks are:
 - (a) Assistance in the preparation and execution of field fortifications.
 - (b) Hardening and protective works.
 - (c) Assistance to camouflage, concealment and non-electronic deception.
 - (d) Assistance in the clearance of fields of fire.
 - (e) Advice on the selection of buildings for defence and protection.

e. **General Support.** Engineers are required to carry out a variety of tasks in addition to providing close support to tactical forces. These tasks differ slightly between nations due to differences in national engineer responsibilities. Such tasks may include:

- (1) Supply of water.
- (2) Construction of air landing facilities.
- (3) Airfield damage repair.
- (4) Provision and maintenance of utilities and structures.
- (5) Maintenance of main supply routes.
- (6) Explosive ordnance disposal.
- (7) Operation and repair of railways and ports.
- (8) Operation, installation and repair of fuel storage and distribution systems.
- (9) Geographic support.
- (10) NBC decontamination (see ATP-52).
- (11) Snow clearance.

f. Additional details of engineer doctrine can be found in ATP-52.

223. **NBC.**a. **General.**

- (1) Despite efforts in arms and control and reductions, the risk of the continued existence, and even proliferation, of NBC weapons requires that their use continue to be taken into account and defensive measures maintained. In addition, the spread of industrialization means that the threat of encountering Toxic Industrial Hazards (TIH) on operations is increasing. These hazards arise from the deliberate or accidental release of Toxic Industrial Materials. This Section, therefore, considers the planning and execution of NBC defensive measures during the conduct of operations under the conditions or the threat of NBC weapon employment or TIH and in an NBC environment.
- (2) While the new NATO strategy and force structures do not change the principles of NBC defense, in future, greater emphasis will have to be given to making lower levels of command self sufficient for their NBC defense. As forces may be operating for protracted periods, widely spread out, over long and insecure communications; and to standardizing doctrine and procedures within multinational forces. NATO forces must be able to assess the NBC threat and take effective defense measures during operations other than war, including a response to accidental release, terrorist attack or sabotage, as well as regional conflict and general war. Such measures must be implemented in close coordination with national civil and military agencies.

b. **Concepts and Principles.**

- (1) **Operational Requirement.** A primary operational requirement for a commander is to organize his operations in such a way that a change from operations conducted under the threat of NBC weapons to operations in an NBC environment can be accomplished with the minimum loss of combat effectiveness and adjustment of his plans. To fulfil this requirement normal tactical security activities including deception, concealment, and cover, dispersal, speedy reaction and redeployment will acquire increased importance. The degree to which these measures may be adopted will be governed by the mission.
- (2) **Defensive Measures.** Measures used to protect formations operating under the threat of enemy NBC strikes or contaminated environment include:
 - (a) Pre-Attack Precautions, including employment of detection, alarm, and warning systems and dispersion of units.
 - (b) Immediate Actions on Attack.
 - (c) Post-Attack Counter-Measures, including NBC reconnaissance.
 - (d) Whilst defensive planning must take into account all three elements of the NBC threat, it is recognized that the demanding measures required to counter

the modern chemical threat can and will provide a firm foundation for an effective defense against nuclear and biological weapons. This acceptance, combined with standardized graduated levels of NBC threat and appropriate levels of individual NBC protection ordered as required by the threat and situation assessments, form the basis of a formation's NBC defense.

- (3) **Offensive Measures.** It is necessary to gather intelligence on, and to take measures to locate and neutralize, enemy systems, which are capable of delivering NBC weapons.
- (4) **Troop Effectiveness.** In ordering specific levels of individual NBC protection, the commander must balance the necessity of preventing unacceptably high casualties inflicted by an enemy NBC strike against the inevitable degradation of operational effectiveness that will result with the adoption of comprehensive individual and collective protection measures. This can be accomplished by assessing the NBC threat and establishing an effective detection and warning system. He must be prepared, if necessary, to take calculated risks to ensure that troops spend the minimum amount of time at high NBC states.

c. **Planning.**

- (1) **Enemy Offensive NBC Operations.** It is essential to understand the immediate effects of those NBC systems that may be employed against NATO troops, and the subsequent longer term results an enemy would hope to bring about through their use.
 - (a) Nuclear weapons can cause heavy losses in personnel and materiel. Widespread destruction and devastation due to blast and heat, fires, destruction, or disruption of command and control communications, either physically or through the effects of the electromagnetic pulse (EMP) and transient radiation effects on electronics (TREE), and long lasting radiological contamination of terrain and materiel.
 - (b) Biological weapons can cause significant personnel casualties and adversely affect both military and civilian morale. Due to their characteristics biological weapons, including toxins, are difficult to predict, contain and counter. An enemy may employ such weapons clandestinely prior to hostilities. Once hostilities have commenced their use in the rear area may be expanded, targeting reinforcement centers, transit points and other key facilities that accommodate or support large numbers of military or civilian personnel. Biological weapons may be employed on the battlefield to harass and debilitate troops deployed in both forward and reserve positions as well as those engaged in combat support and combat service support activities.
 - (c) Chemical weapons can make terrain and equipment difficult to use and cause heavy losses among unprotected and unprepared personnel, disruption of combat support and combat service support activities, and severe morale problems in the rear areas. An enemy could employ non-persistent chemical

agents to harass or neutralize troops facing or flanking the enemy's main lines of advance; non-persistent and persistent agents to isolate reserves, disrupt combat support, and combat service support activities, to support airborne or air mobile operations, to assist in the protection of the open flanks of advancing forces and to significantly reduce the operational effectiveness of air fields, ports, and other rear area facilities.

- (2) **Planning NBC Defensive Measures.** The two key elements in planning effective NBC defensive measures are a current, comprehensive and accurate NBC threat assessment and a commander's judgement as to what specific actions or activities can be implemented or ordered without unduly degrading the operational effectiveness of a formation. Major factors to be considered include: Enemy capability to successfully mount and follow-up an NBC strike (to include available delivery means, decontamination facilities, reserves, medical support, etc).
- (a) Likely enemy intentions and associated options for the employment of NBC weapons.
 - (b) The terrain and the effects it may have on various NBC weapons systems.
 - (c) The prevailing and predicted weather conditions and the effects they may have on the enemy's NBC weapons effectiveness.
 - (d) The standard of friendly forces training and their experience in implementing and operating under individual and collective NBC defensive measures.
 - (e) The degree to which increased levels of individual and collective protection will degrade the formation's operational effectiveness.
 - (f) The effectiveness of the NBC Warning and Reporting System, including its ability to warn units of known missile launchings.
 - (g) The effectiveness and availability of the formation's individual and collective NBC protective equipment.
 - (h) The medical support available.
 - (i) The effectiveness of available contamination control equipment, plans, and procedures.
 - (j) The effectiveness of NBC detection and surveillance equipment and NBC reconnaissance plans.
 - (k) The risk of encountering Toxic Industrial Materials resulting from an intentional or accidental release.

d. **Execution.**

(1) To ensure successful combat operations can be conducted under threat of NBC attack or in an NBC contaminated environment, effective defensive measures must be understood, practiced, and enforced. Such measures can and will limit casualties and damage sustained as a result of an enemy NBC strike and enable friendly forces to continue with their mission despite adverse conditions.

(2) Defensive measures implemented or ordered should include:

(a) **Pre-Attack Precautions.**

- i. Early activation of the NBC Reporting and Warning Organization, the specialist NBC staff and NBC defense units where available.
- ii. Thorough and continuing refresher training on NBC protective measures.
- iii. Distribution and maintenance of individual and collective NBC protective equipment.
- iv. Ordering and enforcing of NBC protective measures including use of protective equipment, posting of sentries, use of automatic detectors and alarms and ensuring all personnel and materiel remain under cover whenever possible.
- v. Close and continuing appraisal of the NBC threat and adjustment of individual protective levels as warranted.
- vi. Strict enforcement of all countersurveillance measures.
- vii. Alerting and prepositioning of medical, NBC reconnaissance, and decontamination personnel and supplies.
- viii. Initiation of preventive medicine programs and inspections.
- ix. Reviews of all operational plans and procedures to determine if modifications will be required for continued use in an NBC contaminated environment.

(b) **Immediate Action On Attack/Protection During Attack.**

- i. Immediate action individual protection drills.
- ii. Immediate passage of alarm and subsequent information relating to the attack.
- iii. Prompt individual decontamination and activation of collective protection when and where possible.

- iv. Prompt monitoring and decontamination of personnel, equipment, and materiel required to maintain combat readiness.
 - v. Continued surveillance by NBC sentries and warning devices to detect possible follow-up strikes. (Warning devices will require resetting).
- (c) **Post-Attack Countermeasures.**
- i. Assessment of the effect of the enemy attack to discover whether the formation will be able to operate as planned or whether the existing plans will have to be adjusted.
 - ii. Assessment of enemy intentions to follow-up the strike with an assault, further NBC attacks, etc.
 - iii. Continued operation of the NBC Reporting and Warning Organization and updating of NBC threat assessment.
 - iv. Activation of specific post-attack control measures as appropriate. These may include:
 - aa. Radiation exposure control program.
 - ab. NBC reconnaissance program.
 - ac. Contamination control program.
 - ad. Damage control/preventative medicine programs.
 - ae. Disease control/preventative medicine programs.
 - v. Maintaining appropriate levels of individual protection.
- (d) The immediate collection, transportation and analysis by specialist NBC staff of any Toxic Industrial Materials, BW or CW agent samples will be vital, not only to provide evidence of first use, but also to evaluate and confirm the effectiveness and validity of current NBC defensive measures, including medical prophylactic treatments.
- e. **Action to be taken by commanders after an NBC attack.**
- (1) Once a force has been attacked with NBC weapons, the local commander must be prepared to act independently in the event of destruction or degradation of normal command and control channels. His first priority must be to continue with the original mission, at least for the time being. For this purpose, he will have to assess the situation on the spot, react resolutely to overcome any psychological effects and initiate those measures, which are necessary to conduct operations in an NBC environment.

- (2) The commander at a higher level must examine whether he can maintain his original operational plan, modify it, deviate from his mission. It is, therefore, essential that he quickly obtain a clear picture of the overall situation. He must decide to what extent rescue/recovery measures can be started and when and how to employ his NBC defense forces. Depending upon the circumstances, he must also examine the use of his reserve.
- (3) Particular consideration, as outlined below, will have to be given to any areas which have been contaminated. Where possible contaminated terrain should be avoided and contaminated personnel and equipment should be decontaminated as fully as circumstances permit.
 - (a) **Nuclear.** Areas, which have been contaminated by nuclear radiation, will require the commander to make immediate and continuing assessment of the radiation hazard to his troops. The need for, and the timing of, their evacuation and the future use of the terrain concerned will depend upon the radiation dose rate and the degree of protection available.
 - (b) **Biological and Chemical.** Areas on which persistent biological or chemical agents or toxins have been used may require evacuation as the situation demands and the mission permits. The commander should, however, only leave troops in the area if it is essential for the accomplishment of the mission, because their performance will be degraded and morale may suffer. Heat stress and unit operational effectiveness must be taken into consideration, particularly if the temperature, humidity, and work rate are high or likely to increase.
 - (c) **NBC.** In the case of nuclear, biological, or chemical attack, it may be necessary to evacuate highly contaminated hazardous areas immediately. Should such a situation arise, it will undoubtedly require a revision of operational plans.
- (4) In adjusting his plan, the commander must obtain an overall picture of the extent of contamination in his area of operation by initiating NBC reconnaissance and survey. For the continuation of combat, it may be necessary to move troops across, or operate within, contaminated areas. Armored forces are more suitable for operations in such areas; non-armored forces can only remain in them for a limited time. Air mobility can assist in overcoming the problem of moving non-armored forces across a contaminated area, but care must be taken against the danger from vapour rising to the level of flight.

f. **Command and Control.**

- (1) A considerable threat to command and control on the battlefield is the degradation and interruption in communications caused by the effects of NBC weapons and the necessity to wear protective equipment. The electro-magnetic pulse, which is produced by a nuclear detonation, can cause a prolonged interruption of communication links and even the physical destruction of vulnerable parts of communication and other electronic systems. In these circumstances, it is even

more important that each commander completely understands the mission and the higher commander's intentions, so that he can continue operations in the temporary absence of communications.

- (2) Communications must be re-established as rapidly as possible. This may have to be accomplished initially by the use means, which have not been affected (e.g., messengers, liaison teams, and helicopters). If this crisis period is to be overcome without loss of operational effectiveness, such measures must be practiced during training to help commanders make correct decisions.
 - (3) The rapidly changing battlefield situations created by the use of NBC weapons will be complicated by the slower reaction times experienced by personnel, including staffs, forced to operate in higher levels of NBC protective equipment. Training of staffs in scenarios involving NBC situations can help alleviate this problem.
 - (4) Clear means for identifying individuals wearing full protection must be adopted (STANAG 2429).
- g. **Combat Service Support.** The commander has to consider the following factors, which will have an impact on combat service support.
- (1) The handling of casualties will require a comprehensive and detailed plan. It must make provision not only for the requirement to treat the effects of whatever NBC weapons may be employed, but also the facilities, equipment, and personnel to effectively decontaminate and treat all casualties within an NBC-contaminated environment. The provision of casualty decontamination facilities and collective protection for use by medical services must be given a high priority.
 - (2) More frequent replacement of supplies, potable water, equipment and in particular NBC clothing will be necessary due to contamination or destruction.
 - (3) Maintenance and repair of equipment in an NBC environment will take longer than under normal conditions. In an extreme case, the staff may decide that the repair will take too long for the repair effort to be worthwhile. Again, the provision of collective protection for use by maintenance personnel must be considered.
 - (4) The danger of dehydration will demand a drinking policy to be enforced. There will be an increased need for water due to larger individual consumption rates and decontamination operations.
 - (5) There must be a re-assessment of transportation priorities taking into account a need for the evacuation of mass casualties and increased resupply, including NBC stores, and for diversions to avoid areas of heavy damage or contamination
 - (6) Consideration must be given to the provision of collective protection for use by troops requiring a safe location for purposes of rest and hygiene if such troops must remain in a contaminated environment for prolonged periods

- (7) Materiel and stocks will have to be protected from chemical contamination by the application of hardening techniques.

224. **Rear Area Security.**

- a. **General.** In providing for the security of his rear area, a NATO tactical commander must respect the sovereignty of the host nation/receiving nation and, together with his staff, make every effort to ensure all rear area security operations conducted by NATO forces are closely coordinated with those of national authorities and forces.
- b. **Definition.** A rear area is defined as “the area extending forward from [a particular command’s] rear boundary to the rear of the area of operation of the next lower level of command. This area is provided primarily for the performance of combat service support functions”.
- c. **Limitations on NATO Commanders.** A NATO commander cannot make his plans for rear area security in isolation. He must liaise closely with national military and civilian authorities and respect negotiated agreements that, in some cases, may restrict NATO operations within a host nation. Most formations and headquarters will be established with special G9 or Civil-Military Cooperation (CIMIC) staffs and most formations will normally exchange liaison officers with the appropriate host nation authorities.
- d. **Concept and Principles.**
 - (1) **Purpose.** The purpose of rear area security is to safeguard important facilities, installations, and areas from disruption by an enemy and to maintain control of the rear area in order to preserve the tactical commander’s freedom of action. The type and extent of security required or imposed will depend upon the nature and importance of such facilities and areas, the potential threat and the availability of friendly forces for employment in the rear area.
 - (2) **Threat.** The potential for disruption in a rear area is considerable. The threat ranges from single enemy agents or saboteurs to large enemy combat formations and include enemy Information Operations. The enemy may attempt to interrupt support activities, interdict lines of communication and cause diversion of combat forces from the main battle area. Likely targets in the rear area are storage sties, reserves, command and control installations, rear electronic warfare/air defence artillery sites, airfields, logistic bases, port facilities and major river crossings. Political and military leaders may also be threatened.
 - (3) **Principles.**
 - (a) **NATO/National Coordination.** All rear area security plans and operations must be developed, prepared, coordinated and executed in close cooperation with appropriate national authorities and adjacent formations.

- (b) **Positioning in the Rear Area.** The physical siting of the formation's elements within its rear area and arrangements for the provision of possible mutual support, must be carefully coordinated by operational and support staffs.
 - (c) **Command and Control.** Within a formation authority for the planning and implementation of all rear area security operations should be vested with a single commander. Host nation forces may support him in this task or assume specific responsibilities in accordance with negotiated agreements.
 - (d) **Reserves.** The commander should nominate a dedicated mobile reserve capable of rapid deployment to counter threats in the rear area.
 - (e) **Self Defence.** Every unit and sub-unit in the rear area is responsible for self-defence and the security and protection of any military and/or civilian installations that use it. Units are also expected to defend themselves against sabotage and small scale attacks.
 - (f) **Response.** Enemy attacks must be countered rapidly and with sufficient strength to (at least) contain the enemy in preparation for his subsequent destruction in order to ensure the continued freedom of action of the friendly force. The commander must always keep in mind the effects on the local population.
 - (g) **Transiting Units.** Units moving through or temporarily located in the rear area, should be included in the commander's rear area security plan.
- (4) **Planning.** Key factors to be considered during the planning process include:
- (a) Command and control relationships including the defining of areas of responsibility.
 - (b) Coordination, cooperation, and liaison with forces under national command, together with other services, civil authorities and adjacent forces.
 - (c) Availability of adequate communications links.
 - (d) Reliability of warning and reporting systems.
 - (e) Responsibilities for surveillance and patrolling.
 - (f) Countermeasures for the range of threats posed by the enemy, from single saboteurs to major incursions.
 - (g) Availability of forces from higher or other formations should reinforcements be required.
 - (h) Countermeasures against air reconnaissance/air attack.

- (i) Measures required to find and destroy committed enemy forces.
 - (j) Countermeasures against NBC attacks including coordination and control of NBC warning and reporting systems.
- (5) **Countering the Threat.**
- (a) **Air Threat.** Rear areas are particularly vulnerable to air attack unless air superiority or, ideally, supremacy has been achieved by friendly forces. The control and allocation of air defence assets must be carefully coordinated to ensure that all units and vital installations are protected.
 - (b) **Covert Threat.** Units and sub-units in the rear area must be prepared to secure those areas and installations assigned to them in order to counter any covert threat to them or their operation by hostile agents, partisan, or special forces. Any other such measures will normally be the responsibility of national police and/or protective forces, who shall carry out such activities in accordance with existing national arrangements.
 - (c) **Limited Attacks.** Units and sub-units in the rear area must be prepared to defend the localities and facilities they occupy against small scale attacks using only their own resources.
 - (d) **Large Attacks.** Units and sub-units in the rear area must be prepared to defend the localities and facilities they occupy against major enemy attacks until they can be relieved by other forces of the formation tasked or formed to conduct rear area combat operations.
 - (e) **Major Enemy Incursions.** All units and sub-units in the rear area must be prepared to engage in combat with whatever resources may be available to slow or block a major incursion pending the commitment of sufficient forces to contain and destroy the enemy. The level of friendly forces needed to achieve such a result may require the intervention of rear area security or reserve forces belonging to higher or adjacent formations. This type of threat will also require a decision to commit a combined tactical combat force to defeat it.
- (6) **Command and Control.**
- (a) **Responsibility.**
 - (i) Within the Combat Zone, NATO commanders shall be the authority for rear area security in those areas where they are responsible for the conduct of operations. National commanders are the authority for rear area security in those areas where they are responsible for the maintenance of operational freedom.

- (ii) Within the Communication Zone, national commanders and appropriate civilian authorities will normally be the authority for rear area security activities.
- (b) **Written Orders.** Written orders prepared for the conduct of operations should normally include an Annex setting out details of the Rear Area Security (Protection) Plan.
- (c) **Communication.** Due to the large number of NATO military, national military and national civil authorities and agencies involved in any rear area security operation, detailed communication planning will be essential. Adequate command and control facilities and reliable communications links must be made available and be maintained to support rear area security.

SECTION V AIR DEFENCE

225. **General.** The airspace of a theatre is as important a dimension to joint operations as the terrain itself. Airspace is used for critical purposes including manoeuvre, firepower, reconnaissance and surveillance, transportation, and battle command. Effective control and use of the airspace will decide the outcome of campaigns and battles. Commanders must consider airspace and the apportionment of air power in planning and supporting their operations. Commanders must expect the enemy to contest their use of the airspace and must protect friendly forces from enemy observation and attack. AD operations contribute to gaining and maintaining the desired degree of air superiority and force protection.

226. **Air Defence Functions.** One of the most effective means of destroying the cohesion and freedom of action of forces involved in an operation is through attack from the air. AD considerations are consequently of vital importance to commanders at all levels.

- a. **Protection.** A land commander will need to ensure that his Ground Based Air Defence (GBAD) assets protect his forces. If there are not enough available to cover the entire operation then he will need to allocate priorities. The systems available to a commander will range from surface to air missiles, AD gun systems to small arms fire which are, ideally, deployed to provide a layered defence in order to cover all heights that the enemy might operate at. At the tactical level, the systems available will cover the following levels:
 - (1) Very Low below 500 ft.
 - (2) Low 500 - 5000 ft.
 - (3) Medium 5000 - 25000 ft.
- b. **Coverage.** GBAD systems will be employed in both area and close defence:
 - (1) **Area Defence.** Area defence is designed primarily to give uniform cover over a broad area within which movement or deployment is taking place.
 - (2) **Close Defence.** Close defence, also known as point defence, is to ensure the survival of specific and particularly important assets. The term close defence also covers route defence.
- c. **Other Tasks.** GBAD units can make a variety of other contributions to the battle. They contribute to the intelligence and EW effort by gathering and disseminating information about the enemy air order of battle. They also reinforce the Deep and Rear Operations by denying the enemy his reconnaissance and command and control aircraft.

227. **Counter-Air.** Counter-air operations are conducted by the air component to attain and maintain the required degree of control of the air for the conduct of joint operations. These operations will often enable Land operations. The degrees of control of the air they seek to gain are:

- a. **Favourable Air Situation.** An air situation in which the extent of the air effort applied by the enemy air assets is insufficient to prejudice the success of friendly maritime, land or air operations (ATP-33).

- b. **Air Superiority.** That degree of dominance in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea and air forces at a given time and place without prohibitive interference by the opposing force (AAP-6).
- c. **Air Supremacy.** That degree of air superiority wherein the opposing air force is incapable of effective interference (AAP-6).

For further details of Counter Air operations refer to AJP-3.3.

SECTION VI COMBAT SERVICE SUPPORT

228. **General.** The purpose of CSS is to maintain a force with the necessary combat power for the duration required to achieve its objectives. It is the provision of supplies including their storage, handling and transportation, the maintenance and repair of materiel, medical care and treatment of casualties, personnel replacement, equipment replacement and the provision of necessary welfare services. Those responsible for CSS are tasked to ensure that combat forces are supplied with what they need to accomplish the mission. It is important that the supplies and facilities needed are provided in the right quantity, at the right time, at the right place and in a serviceable condition.

229. **Scope.**

- a. This section highlights the implications that CSS may have on the planning and conduct of tactical operations.
- b. Each nation bears ultimate responsibility for ensuring the provision of logistic support to their own forces. Nations and NATO authorities have a collective responsibility for CSS of NATO's multinational operations. It is facilitated by standardized or interoperable materiel, such as interchangeable components, weapons, equipment, fuels and general items of supply, in association with the adoption of common procedures. However, the accomplishment of common tasks as well as emergency situations in combat may make it necessary for allied forces to support each other or to redistribute logistic resources. Personnel management is a national responsibility for both national and multinational operations. The features of CSS special to particular operations are dealt with in the appropriate chapters of this ATP and can also be found in ALP-4.2.

230. **Principles of Logistic Planning.** Nine principles of logistic planning and execution are stated in MC 319/1, NATO Principles and Policies for Logistics. Logistic considerations for Land operations are discussed below.

- a. **General.** Commanders should consider the following:
 - (1) Coordination of tactics and CSS.
 - (2) Foresight.
 - (3) Simplicity.
 - (4) Economy.
 - (5) Continuity.
 - (6) Firm Control.
 - (7) Flexibility.
- b. **Coordination of Tactics and CSS.** To succeed, the CSS plan must be integrated with and must support the tactical plan. It is most important, therefore, that the logistic staff are

brought into the planning at the outset as the realities of the CSS situation may have a profound effect on the plan to be adopted.

- c. **Foresight**. CSS planning will be a lengthy process and must start well before the commencement of any operation. It is, therefore, necessary for CSS planners to forecast, with a reasonable degree of accuracy, the probable course of an operation and the corresponding requirement for men and materiel. To do this they must keep themselves fully and continuously briefed on the commander's intentions so that they are better able to anticipate difficulties which may affect the logistic plan.
- d. **Simplicity**. The simpler the logistic plan, the more easily it will be understood and the better it can be adapted to meet changing circumstances. The use of clearly understood and agreed standing operating procedures covering routine and frequently recurring CSS functions will ease planning.
- e. **Economy**. CSS resources will seldom be plentiful, therefore, it is essential that the most efficient use is made of all available manpower, materiel and movement facilities.
 - (1) Any tendency towards requesting too many CSS resources must be resisted.
 - (2) The ways in which the commander can achieve economy are so wide ranging that they cannot all be listed here. The following are a few of the more important examples:
 - (a) Care and maintenance of equipment will reduce the need for frequent replacement.
 - (b) Efficient equipment maintenance support systems ensure that the need for workshops with their associated stores, recovery and evacuation units, is kept to a minimum.
 - (c) Efficient use of all available movement resources.
 - (d) Use of efficient techniques, automatic data processing and the employment of mechanical handling devices.
- f. **Continuity**. CSS must be continuous for all stages of an operation. Any interruption in support can cause serious disruption to operations.
- g. **Firm Control**. It is essential to exercise close supervision of the resources available and the supply organization. Stocks need careful control to conserve them for future operations.
- h. **Flexibility**. Flexibility in the field of CSS is the ability to conform to changing tactical plans. The complete CSS organization must be flexible if it is to continue to function efficiently when operational conditions alter. Two other points must also be considered:
 - (1) **Movement**. Flexibility in planning CSS is derived from a consideration of the different characteristics of all the movement means available (land, sea or air), each of which have inherent advantages and disadvantages.

- (2) **Balance.** The threat, particularly nuclear or enemy Deep Operations, requires that stocks are dispersed and held in sufficient quantity in the combat zone to meet requirements should deliveries from the rear be interrupted. There will always be a conflict between the need for dispersal and the simplicity of concentrations. This must be resolved by achieving a proper balance between the forward and rear areas when planning the deployment of resources of both transport and supplies.

231. **Implementation.**

- a. **Positioning.** The CSS units provide constant support for units employed in combat. They aim to accomplish their tasks as close to the supported forces as possible, however, if they are employed too far forward, there is an increased risk of losses through enemy action, or of their work being hampered. It should be kept in mind that frequent changes of position will also reduce the efficiency of supporting CSS units.
- b. **Prepositioning.** Defending one's own or an allied country makes it possible to preposition stocks, and use maintenance resources and medical facilities in fixed installations. It is from these resources that troops will be supplied and supported in the first days of combat.
- c. **Standard Procedures.** The rapid and continuous provision of CSS requires simple and effective procedures. Standardized procedures and forms should be used whenever possible in order to ensure interoperability.
- d. **Ammunition Resupply.** The high quantity of ammunition required for effective operations makes considerable demands on handling and transportation capabilities. Bulk ammunition should be delivered as far forward as practicable.
- e. **Fuel.** Fuel is transported as close to forward areas as possible, by means of pipelines, rail transport, tankers, inland waterway vessels or air (fuel tanker flights and underslung loads).
- f. **Repair, Recovery and Evacuation.** Preventive maintenance during operations assumes particular importance for prolonging the life of materiel and keeping repair requirements low. Repair should be conducted as far forward as possible. Use must be made of available transportation to recover or evacuate equipment when repair cannot be achieved.
- g. **Movement.** Transport operations must be carefully planned, directed and supervised. Protection of convoys may be necessary as might traffic control. Air transportation resources may be used to support logistic resupply and medical evacuation.
- h. **Medical.** Unit medical personnel and supporting medical units provide initial treatment, carry out preventive medical measures and provide medical resupply. Those casualties requiring continuing care or immediate surgery are evacuated. Although nations bear the ultimate responsibility for the provision of medical support for their forces, medical units and hospitals must be prepared to treat and stabilize all casualties until evacuation is arranged.

- i. **Personnel Replacement.** To compensate for losses it is essential that replacements are brought forward promptly. If personnel replacements are inadequate, the commander may need to establish priorities.
- j. **Reconstitution.** Detailed planning and dedicated resources will be required for the reconstitution of formations.
- k. **Other Matters.** Other areas of CSS - such as equipment replacement, food and spares - are not dealt with here in detail. However, they are important and the principles described are valid for these areas of support as well.

232. **Command and Control.**

- a. **General.** The effectiveness of any CSS system is dependent upon accurate and timely reporting, clearly defined procedures, adequate communications, good liaison and a clear understanding of the operational plan.
- b. **Responsibilities.** The commander must always take into account, at an early stage of planning, the combat service support situation. The plan may later have to be adjusted to what is possible allowing for the amount of time required to adapt CSS to a changing tactical situation. Commanders normally delegate the detailed planning and execution of CSS plans to their staffs, but they must be made aware of critical areas that may affect operations and require their personal decisions. CSS staffs must ensure they remain knowledgeable and aware of the current operational situation as well as maintaining foresight for possible future operational needs. Both CSS and G3 staff must need to exchange information on a regular basis to ensure that they remain up to date on the situation in the others functional area.

233. **CSS Considerations for Combat Support Forces.** Where combat support forces are operating behind the FLOT, their CSS requirements will differ little from those of other units. In multi-national formations in particular, CSS of combat support units whose tasking requires them to move or operate across formation boundaries, or across the FLOT, must be planned and coordinated in detail. Commanders will also need to consider the following points when planning operations:

- a. **Fire Support.** One of the major CSS considerations in any operation will be the supply of artillery ammunition. The use of natures, which are both more accurate and more lethal, may reduce the amount of ammunition required, though it will still remain substantial. In addition, the increased dispersion and mobility of artillery units, together with operational concepts stressing tempo and simultaneity, will require an increased emphasis on distribution and ammunition management. CSS must be organised to be responsive to the need for fire support to be available continuously.
- b. **Operational Assistance.** The range of support roles undertaken by engineers will lead to a variety of equipment, stores, mines and construction material being required. Engineer work will only go smoothly if such resources are available when needed. Whilst their supply and control is an engineer affair, they will require the assistance of general purpose transport to move the resources forward.

234. **Air Transport.** Air transport, also known as Air Lift, is the use of transport for the following types of operations:

- a. Airborne operations.
- b. Air logistic support.
- c. Casualty evacuation/aeromedical evacuation.
- d. Special air operations.

235. **Helicopters.** Roles for utility and transport helicopters, often in a tactical grouping including ground or attack helicopters, include:

- a. Combat Search and Rescue (CSAR).
- b. Casualty evacuation.
- c. CSS operations.

236. **General Support Engineering.** Combat Service Support units requires the engineers to carry out a variety of tasks in addition to providing close support to tactical forces. These tasks differ slightly between nations due to differences in national engineer responsibilities. Such tasks may include:

- a. Supply of water.
- b. Construction of air landing facilities.
- c. Airfield damage repair.
- d. Provision and maintenance of utilities and structures.
- e. Maintenance of main supply routes.
- f. Explosive ordnance disposal.
- g. Operation and repair of railways and ports.
- h. Operation, installation and repair of fuel storage and distribution systems.

237. **Rear Area Damage Control.**

- a. **General.** In planning and conducting military damage control measures within his area of responsibility, a NATO tactical commander must respect the national sovereignty of the host nation. Together with his staff, make every effort to ensure all military damage control activities and operations are closely coordinated with those national forces and authorities. Responsibilities and support from the host nation assets will normally be negotiated at theatre level in accordance with 'status of forces' agreements and treaties.

- b. **Definition.** Area damage control has been defined as 'measures taken before, during, or after hostile action or natural or man-made disasters, to reduce the probability of damage and minimize its effects'. (AAP-6).
- c. **Limitations on NATO Commanders.** A NATO commander cannot make his plans for rear area damage control in isolation. He must liaise closely with national military and civilian's authorities and respect negotiated agreements that, in some cases, may restrict NATO operations within a host nation. Most formations and headquarters will be established with special G9 or Civilian Military Cooperation (CIMIC) staffs. Most formations will normally exchange liaison officers with the appropriate host nation military authorities.
- d. **Concept and Principles.**
 - (1) **Purpose.** The purpose of rear area damage control is to introduce and enforce a series of structured protective measures intended to reduce the probability and/or minimize the effects of damage to installations and facilities used to support the operations of friendly forces. The enemy may cause such damage, by accident, or by 'natural' causes. Although damage control measures are applicable throughout a theatre of operations, their execution will normally be more feasible in the rear areas.
 - (2) **The Threat.** The potential threat to the rear area is considerable. An enemy may employ a wide variety of means to destroy, damage, or disrupt vital elements of the infrastructure. The aim of such activities will be to interrupt support services, interdict lines of communications, cause the diversion of combat resources from the main battle area and generally deprive the commander of a secure, efficiently functioning rear area to support his combat operations. Likely targets in the rear area include transport systems (rail, sea ports, canals, airfields, bridges, etc) logistic installations (tank farms, pipelines, storage sites, etc.) nuclear power plants, manufacturing facilities, communication sites, and civilian industrial areas.
 - (3) **Principles.**
 - (a) **NATO and National Coordination.** All rear area damage control plans and operations must be developed, prepared, coordinated and executed in close cooperation with appropriate national military authorities – both military and civilian – as well as with adjacent formation. National jurisdiction must always be respected.
 - (b) **Command and Control.** Authority for the planning and implementation of all rear area damage control operations should be vested with a single commander, supported, if necessary, by national forces who may also assume specific responsibilities in accordance with previously negotiated agreements.
 - (c) **Local Damage Control.** Every unit and sub-unit in the rear area is responsible for damage control in the area that it occupies and at any military or civilian installation that it uses.

- (d) **Transiting Units.** Units moving through or temporarily occupying a rear area should be included in the rear area damage control plan.
- (e) **Use of Military Units.** While both military and civilians will be employed in rear area damage control, only military resources should be used when the damage is in a contaminated area, where combat operations have recently taken place or where there is a particular threat from the enemy.

e. **Planning.**

- (1) **General.** Damage control plans are normally prepared based upon a series of assumed degrees of damage, leading to an estimate of the resources required to minimize damage at each level. Estimates are also made of the resources required quickly to restore a facility or installation to an acceptable level of operation. It should be noted, however, that the replacement or repair of a unit's equipment is not part of damage control as defined in this publication.
- (2) **Key Planning Factors.** Key factors to be considered in the planning process are as follows:
 - (a) Command and control, to include a clear division of areas of responsibility.
 - (b) Coordination, cooperation, and liaison with national and adjacent forces.
 - (c) Availability of adequate communication links.
 - (d) Reliability of damage reporting system and the availability of resources for damage control.
 - (e) Avoidance of major damage control by the use of alternative facilities.
 - (f) Availability of emergency services (medical, rescue, fire fighting).
 - (g) The use of NBC and EOD resources.

f. **Execution.**

- (1) **Degree of Resources Required.** Reconnaissance is essential in order to make an assessment of the resources required to restore an installation or facility back to operation. If the requirement proves to be excessive, a decision may be taken to abandon the installation and seek an alternative.
- (2) **Damage Control Measures.** Damage control measures should include the following:
 - (a) **Preventive Measures.**
 - i. An order of priority for damage control, based on such factors as the

function or service performed or provided the assumed threat, the security requirement and the potential for damage or destruction.

- ii. A regular re-assessment of the threat and, where necessary, an adjustment of damage control plans.
- iii. Preparation of plans and standing operating procedures to be implemented in the event of damages occurring.
- iv. Training of personnel in damage control activities and the stockpiling of appropriate equipment.
- v. Maximum use of camouflage, concealment and deception measures at potential targets.
- vi. The use of self-protection measures, such as berms and sandbagging.
- vii. Fire prevention measures.
- viii. Contingency plans to make maximum use of alternative facilities, transport systems, etc.

(b) **Post Attack Measures.**

- i. Immediate reconnaissance and damage assessment to determine resources required and the effect damage may have on operations.
- ii. Implementation of emergency and contingency plans.
- iii. Clearing of debris, salvaging material, and equipment where possible.
- iv. Implementation of repair plans within the capability of the units involved.
- v. Implementation of repair plans by specialist forces and/or civilian authorities.

(c) **Post Hostility Measures.**

- i. Planning for this phase must commence while hostilities are still taking place.
- ii. Reconstruction, EOD clearance and the isolation and treatment of contaminated areas are all factors, which should feature in the plan.

g. **Command and Control.**

- (1) **Written Orders.** Written orders for the conduct of major operations should normally include an annex setting out details of the Rear Area Damage Control Plan.

- (2) **Communications.** Good command and control will depend on reliable communications planning that takes account of the numerous military and civil agencies required to be in contact with each other.

238. **Electronic Warfare.** EW is one of the principle means of identification for attack of rear area units. All CSS units must be fully aware of the EW situation.

- a. **Electronic Protective Measures (EPM).** The protective measures employed by operations and users of communications and non-communication systems are dealt with in Chap 3 Sect II.
- b. **Countersurveillance.** Electronic warfare support to countersurveillance operations can provide the commander with the locations, activities, and targets of enemy electronic surveillance devices.
- c. **Counter Weapon-Guidance.** Electronic warfare support to counter weapon-guidance primarily consists of obtaining information on the guidance systems of enemy weapons systems to allow the development of self-protection measures. The implementation of these self-protection measures, some of which are electronic, is the direct responsibility of the threatened user. Electronic attack of enemy guidance systems is also a way of self-protection.

239. **Road Movement in the Combat Zone.**

- a. **General.** Road movement in the combat zone is the most important type of movement for the deployment and positioning of ground forces to accomplish their missions. Movement of population is not considered within this publication. International and bilateral agreements exist to regulate the control of population movements.
- b. **Concept and Principles.**
 - (1) **Routes.** Whenever possible, several routes should be used for the movement of a force. This will promote a flexible execution of the move, effectively reducing the length of columns on the move, the vulnerability to enemy air attack and the length of time that the routes are not available for other movement. Consideration should be given to the use of rail transportation, especially when moving tracked vehicles.
 - (2) **Movement Sectors.** By the use of movement sectors, the commander executing the move may use all existing routes, or even move his force cross-country, within his sector. This type of movement is most flexible and is best used in situations when troops are required to be at a high degree of combat readiness.
 - (3) **Protection.** All movement requires protection to a greater or lesser extent. The strength and composition of the protective element will vary, depending upon the situation. It may include:
 - (a) Protection against ground attack by passive and active means:

- i. Reconnaissance patrols forward and covering open flanks.
 - ii. An advance guard.
 - iii. A rear guard.
 - (b) Protection against the air threat, by passive and active means, including additional air defense.
- (4) **March Discipline.** This is essential throughout the move and includes countersurveillance and emission control measures. Any deviations from the specified routes and times may interfere with other movements and can have serious consequences. If unexpected interruptions occur the commander must deal with them immediately and report accordingly. He must ensure that his new decision does not interfere with the overall movement plan. Support by a movement and traffic control organization may be necessary.

c. **Planning.**

- (1) Movement requires careful planning, particularly with regard to time. All available information should be used, including maps, digital data, details from appropriate agencies, particularly from the movement organization headquarters and the knowledge of those who are familiar with local conditions (see also STANAG 2014).
- (2) The most important planning factors are:
 - (a) The mission and the higher commander's concept of operations.
 - (b) The time available and the distance to move.
 - (c) The organization of the move, including troops involved movement and traffic control regulations and control measures.
 - (d) The subsequent tasks.
 - (e) The enemy situation, ground and air, including NBC threat.
 - (f) The relative degrees of mobility.
 - (g) The number of routes, or availability of sectors, or number and capacity of routes available.
 - (h) Terrain and weather conditions.
 - (i) Other movement, including civilian traffic
 - (j) The ability to maintain and repair routes and other lines of communication.

- (3) **Information.** The commander obtains information by:
 - (a) Timely reconnaissance of the route and destination.
 - (b) Liaison/contact with the forces occupying the area and with national authorities, such as movement control agencies.
 - (c) Scouting parties, to which engineers, NBC defense teams, signals teams or military police may be assigned. Their tasks include the checking of diversionary routes and alternate routes at choke points.

d. **Execution.**

- (1) **Movement to the Start Point (SP).** Unit commanders are responsible for the movement of their units to the start point. It is from this point that units commence movement in their designated sequence and at the speed ordered.
- (2) During the move, unit commanders must reckon with the possibility of:
 - (a) **Air Attacks.** If subjected to air attacks, leaders must ensure their forces take appropriate defensive measures and after the attack make every effort to continue the movement.
 - (b) **NBC Threat.**
 - i. If the force is attacked by ground contaminating NBC weapons, the commander, after taking any immediate rescue measures, must seek to leave the contaminated or devastated area as quickly as possible. He must then decide whether to continue with the movement or if it will be necessary to interrupt it for reorganization or decontamination.
 - ii. If the force encounters contaminated terrain, NBC reconnaissance must be initiated, on the basis of which the commander will decide, whether to traverse or bypass the contamination or whether the movement must be interrupted until the terrain has been made passable. In any event, he must report immediately.
 - (c) **Contact with the Enemy.**
 - i. If the force makes contact with the enemy unexpectedly, the principles of the meeting engagement apply. The commander of the force concerned must always think within the mission and the higher commander's concept of operations. Most of all, he must ensure that his freedom of action is maintained.
 - ii. Attacks by minor enemy elements must not delay the continuity of movement. They should be dealt with by suppressive fire or by a small

reaction force, which must deal with the situation quickly and then rejoin the moving force.

(3) **Priorities.**

- (a) The relevant higher commander will establish priorities for movement in the combat zone. Unit/formation movements and routes will be synchronized, coordinated, and de-conflicted to avoid unnecessary delays that may be encountered by friendly forces competing for the same route.
- (b) On the military routes, military movement has priority over civilian traffic. On non-military routes, local police should deal with hindrance by civilian traffic or, if the delay caused is unacceptable, by the movement control organization.

(4) **Release Point (RP).** It is at this point that higher-level control arrangements will cease.

e. **Command and Control.**

- (1) The commander ordering the move will ensure that movement authority is obtained, if required, and such authority will be binding to the commander executing the move.

(2) **Responsibility.**

- (a) **In Forward Combat Zone.** Movement is determined solely by the mission. The responsibility rests with the NATO commanders in coordination with the local authorities where applicable. The moving force provides its own movement and traffic control although some support may be required.
- (b) **In Rear Combat Zone.** Movement plans must be coordinated between NATO and National Commands. The responsibilities are laid down in existing agreement. In principle, the movement is controlled by the movement and traffic control organization that is responsible in that area.

(3) Orders for movement are operation orders. They should include the following:

- (a) The SP/RP and other check/control points.
- (b) Grouping (including priority of traffic/vehicles).
- (c) Destinations.
- (d) Routes or sectors.
- (e) Road clearance times and restrictions.
- (f) Waiting and rest areas (including refuelling and maintenance areas).

- (g) Staging and assembling areas.
 - (h) Restrictions on the use of electronic devices.
 - (i) Any supplementary information concerning the movement organization.
 - (j) Air defence during the move.
 - (k) Fire support control measures and restrictions.
- (4) **Warning Orders.** Units must, if possible, be given advance notice of a move by means of warning orders. As a minimum, these should contain:
- (a) The anticipated mission.
 - (b) The earliest time of departure.
 - (c) If possible, the routes and composition of the moving force.
- (5) **Communications.** Telecommunications traffic should be severely restricted, during unit movement to reduce the danger of detection by enemy forces. Liaison, communications, and movement control will, therefore, have to be conducted mainly by the use of telephone, vehicles, and helicopters.
- f. **Combat Service Support.** Forces should be fully supplied before starting a move. During the move, every opportunity should be taken to refuel and provide food. In arrival at the final destination, the serviceability of equipment should be checked and, if necessary, repairs carried out.
- (1) **Medical.** Elements of the medical service should be assigned to the moving forces to provide medical cover for the move itself. Sufficient ambulances should be made available to evacuate any wounded to nearby medical installations, the locations of which must be well known. Helicopters in a stand-by role are the best and quickest means of evacuating wounded personnel.
 - (2) **Recovery.** Recovery vehicles must be assigned to the movement columns in order to facilitate the removal from the route of heavy equipment that has broken down. Special attention should be given to choke and critical points, such as bridge crossing sites.
 - (3) **Readiness for Battle.** If troops are likely to have to go into combat immediately on arrival at their destination after a long move, it is appropriate to plan the last rest halt, so that the troops will arrive fully supplied and in good physical condition.
 - (4) **Convoy Support Sites.** For long moves, wherever possible, convoy support should be located on main routes in locations, such that they can provide rest, feeding, servicing, and refuelling facilities at appropriate stages of the move.

- (5) **Provost.** Routes will normally be signed and traffic regulated, particularly at defiles, by traffic posts and route patrols

240. **Host Nation Support (HNS) and Local Resources.**

- a. Much of the detail regarding HNS and local resources is contained in AJP-4, ALP-12 and MC 334/1 (Guidance for the Planning and Preparation of Host Nation Support Agreements/ Arrangements (HNSA)). These capabilities are particularly important in the field of common supply items and are applicable to a wide range of operational scenarios. Much will depend on the availability of appropriate resources either in or outside the area of operations and the perceived reliability of commercial organisation.
- b. In most cases, it is cost effective if supplies common to the nations are purchased centrally by the theatre HQ. On many occasions it may be sensible to use the technical expertise of the NAMSA, but it may be easier and most cost effective if the supported force contracts locally. It is important, however, to have a single point of contact for coordinating HNS and for centralised contracts in order to ensure that contributing nations do not compete for scarce resources.

SECTION VII COMMAND AND CONTROL

241. **Introduction.** Command is the process by which the commander impresses his will and intentions on his subordinates. It encompasses the authority and responsibility for deploying forces to fulfil his mission. Control is the process through which the commander, assisted by his staff, organizes, directs and coordinates the activities of the forces allocated to him. To achieve this, he and his staff use standardized procedures in conjunction with the equipment communications and information systems available. Together, these two processes form a command and control (C2) system which the commander, his staff and his subordinates use to plan, direct, coordinate and control operations. Superior C2 can provide the vital advantage on operations, especially against a larger enemy.

242. **Terms and Definitions.** . In order to exercise command and control effectively, a commander must be aware of the States of Command and Command Relationships, which exist between him and the formations and units allocated to him for his mission. These terms and definitions are concerned primarily with the ability of the commander to assign an independent mission, to reorganise the formation to suit his purpose or to direct specific tasks within an agreed mission statement. The relevant terms, as listed below, are defined in the glossary and AAP-6.

- a. **Command.**
 - (1) Full Command (FULLCOMD).
 - (2) Operational Command (OPCOM).
 - (3) Tactical Command (TACOM).
- b. **Control.**
 - (1) Operational Control (OPCON).
 - (2) Tactical Control (TACON).
 - (3) Administrative Control.
 - (4) Coordinating Authority.
- c. **Fire Unit and Combat Support Terms.**
 - (1) Assign.
 - (2) Attach.
 - (3) Support.
 - (4) In Support Of.
 - (5) Direct Support (DS).

- (6) General Support (Gen Sp).
- (7) General Support Reinforcing (Gen Sp Rft) (See STANAG 2887).
- (8) Reinforcing (Rft).

243. **Continuity.** Commanders, their staffs and the communication facilities are likely to be high priority targets. Measures must be taken to ensure their survival, protection and duplication. Throughout operations there must be continuity of command and control. Commanders must ascertain a clear chain and successor of command.

244. **Responsibilities.**

a. **Commanders.**

- (1) **Authority and Responsibility.** Command is the authority vested in an individual for the direction, coordination and control of military forces. A commander exercises that authority over his subordinates by virtue of his appointment. That authority, which derives from law and military regulations, is accompanied by the acceptance of his responsibilities that cannot be delegated.
- (2) **Exercising Command.** The exercise of command is primarily concerned with the planning and decision process. The process must be both dynamic and multi-dimensional and will have to permit decisions about current operations to occur simultaneously with decisions and planning about future operations. Time and information available are the major factors in this process and there is always a need to reach a timely decision in relation to an opponent's own decision-action process if the initiative is to be gained or retained. Commanders and their staffs must therefore aim to operate within the enemy's decision cycle. The exercise of command will, however, be undermined in the absence of any one of three essential components: *information*, *control* and *communications*. In simple terms a commander requires *information* to make decisions, *control* to coordinate and monitor the actions of forces and assets, and *communications* to carry and promulgate information, thus enabling a commander to continue to make and implement decisions towards a common purpose.
- (3) **Direction.** A commander issues directives, orders and instructions both before and during operations. Where possible, these orders should be given personally, and often they will be confirmed in writing. Once operations commence, it will be normal for the commander to make any necessary adjustments to his plan by short, clear orders, often by radio or trunk communications including electronic data processing.
- (4) **Functions.** The role of the commander is expressed in terms of a number of functions to be performed, the specific function involved varying with the level of command and the forces available:
 - (a) Knowing the higher commander's intention.

- (b) Assessing the situation.
- (c) Making decisions.
- (d) Assigning missions.
- (e) Allocating resources.
- (f) Directing forces.
- (g) Sustaining forces.
- (h) Motivating forces.
- (i) Providing leadership

b. **Staffs.**

- (1) **Purpose and Authority.** The staff exists to provide advice and assistance to the commander and provide support to subordinate commanders. The staff has no authority within itself; it derives authority from the commander and exercises it in his name.
- (2) **Functions.** The role of the staff is essentially that of control and its two main functions of coordinating and monitoring. It must make certain that the employed control measures do not impede on the freedom of action of the subordinate commanders. Under the first function of coordinating, the staff supports the commander by gathering, processing and presenting information in a manner that helps the commander to select a particular course of action. Following this, the staff is responsible for the detailed preparation and dissemination of control measures normally promulgated in the form of orders. In the second and overlapping function of monitoring, the staff provide a dynamic feedback essential for making timely decisions. More specifically, the staff's functions are to:
 - (a) Gather information/data.
 - (b) Appraise.
 - (c) Anticipate.
 - (d) Inform.
 - (e) Recommend.
 - (f) Issue directions on behalf of the commander.
 - (g) Supervise.

- (h) Coordinate.
- (3) **Responsibilities.** A headquarters will be divided into a number of staff cells, each having a clear function and responsibilities. They cannot, however, act independently of each other and their efforts must be coordinated to ensure that the commander receives the information and input that he needs in order to make decisions. The specific responsibilities of the staff cells are:
 - (a) G1 - Personnel and Administration, including:
 - i. Personnel management.
 - ii. Manpower administration (including reserves and replacements).
 - iii. Provost and discipline.
 - iv. Prisoner of war administration.
 - v. Casualty procedures.
 - (b) G2 – Intelligence, which comprises:
 - i. an Intelligence Centre providing all-source analytical support to operational staffs and situation monitoring.
 - ii. an Intelligence Ops Section providing requirements management and dissemination.
 - iii. an Intelligence Support Section, providing intelligence system support and collection management support.
 - (c) G3 - Operations, which coordinates the work of all branches and which may have separate cells dealing specifically with:
 - i. Current Operations, providing supervision of operations and cells covering C2W (including EWCC, OPSEC, PSYOPS and Deception. Some nations include EW as a G6 function.
 - ii. Operations Support, providing advice on functional areas such as: ROE, Meteorology, Search and Rescue.
 - iii. a Reports Cell that prepares all reports for the commander, provides operations summaries and prepares/maintains records of all significant operational matters.
 - iv. a Nuclear Ops and NBC Defence Ops Cell.

- (d) G4 - Logistics & Health Service Support, addressing:
 - i. Logistic/Combat Service Support.
 - ii. Health Service Support.
 - iii. Logistic Host Nation Support (HNS) coordination (if not provided by a national or joint HQ).
- (e) G5 - Plans & Policy, dealing with:
 - i. Operational planning & estimate process.
 - ii. Forward planning and coordination.
 - iii. Contingency planning.
 - iv. Operational Analysis (OA).
- (f) G6 – CIS, which includes:
 - i. Communications & Information Systems management (some nations include EW as a G6 function).
 - ii. Frequency management.
 - iii. Cryptography.
- (g) G7 - Doctrine & Training (normally part of a peace-time headquarters, but not necessarily part of an operationally deployed headquarters), addressing:
 - i. Doctrine management.
 - ii. Exercise planning.
- (h) G8 - Resources & Finance, responsible for:
 - i. Civil Secretariat.
 - ii. Civilian personnel management.
 - iii. Finance & budget planning.
 - iv. Contract authority.

- (i) G9 - Civil Military Cooperation, which provides the Civil-Military interface, including:
 - i. negotiation of Coordination and Support Arrangements and Agreements.
 - ii. coordination of Civil-Military Support.
 - iii. coordination with National Civil Emergency Planning.
- (j) Arms and Services – most Arms and Services will provide input through the relevant staff branch, such as transport through the J4 cell. The following Arms, however, provide their input directly to the commander:
 - i. Artillery.
 - ii. Engineers.
 - iii. Aviation.
 - iv. Air defence.
 - v. Communications.
 - vi. Military Police.

245. **The Decision Making Process.**

a. **General.**

- (1) Although much of the decision making process in the exercise of command can be delegated, the commander remains ultimately responsible for determining how his formation is to operate. He is responsible for accomplishing the mission for which he develops a concept of operations. His staff who will also support him in the development and implementation of the plan provides him with information. Normally he should think two levels above and below his own level of command.
- (2) The focal point for this activity is the estimate where the situation, mission and any other relevant information is evaluated prior to the commander deciding on the plan for initial action or further conduct of a battle or engagement. A plan should be imaginative in concept and simple to execute. A flexible plan will allow a commander to seize opportunities as they occur during the battle and enable him to react in unforeseen circumstances.
- (3) Once the commander has expressed his intent and outline concept of operations in the form of his **decision** his staff will produce the final version of the plan with the necessary detail. From this plan the operation order is developed.

- (4) The procedure used to identify tasks, develop plans and issue instructions to subordinates in order to accomplish the mission is the decision making and planning process. The most critical factor facing the commander and his staff in this process is likely to be time. It therefore relies on three key elements in order to achieve success.
- (a) Clarity of guidance by the commander.
 - (b) The successful coordination of concurrent staff activity by the COS /Executive Officer/Operations Officer.
 - (c) An understanding of the process in detail by the staff.

Normally, the receipt of a task or mission from higher authority begins the process, although, a warning order would have been issued to create a faster response.

b. **Main Effort.**

- (1) Main effort is defined as 'a concentration of forces or means, in a particular area, where a commander seeks to bring about a decision.' It is the activity, which the commander considers crucial to the success of his mission at that time. When receiving a mission a commander will be given a clear indication as to where the superior commander's main effort lies. The statement of main effort allows a subordinate commander to focus his actions on the commander's aim, maintain that aim and yet gives him flexibility in achieving it. It is stated in the commander's concept of operations and will not be shifted except when necessary to the success of a mission. There may, however, be a different main effort for different stages of an operation. Initially, for example, it may be with the force fixing the enemy as part of a deep operation before switching to the main force engaged in the close operation who are striking the enemy. Similarly, although the main effort for combat support and CSS elements must always support the main effort of the unit or formation they are supporting, they will not necessarily coincide with it. For example, the main effort for CSS might be the refurbishment of another brigade, currently out of contact, but with a subsequent task essential to the mission.
- (2) The commander has a number of ways to give substance to his main effort.
- (a) Narrowing of boundaries - economy of force elsewhere.
 - (b) Grouping - extra combat power on the main effort.
 - (c) Allocation of priority for combat support including artillery, EW, etc.
 - (d) Allocation of priority for combat service support.
 - (e) Planning options for reserves.

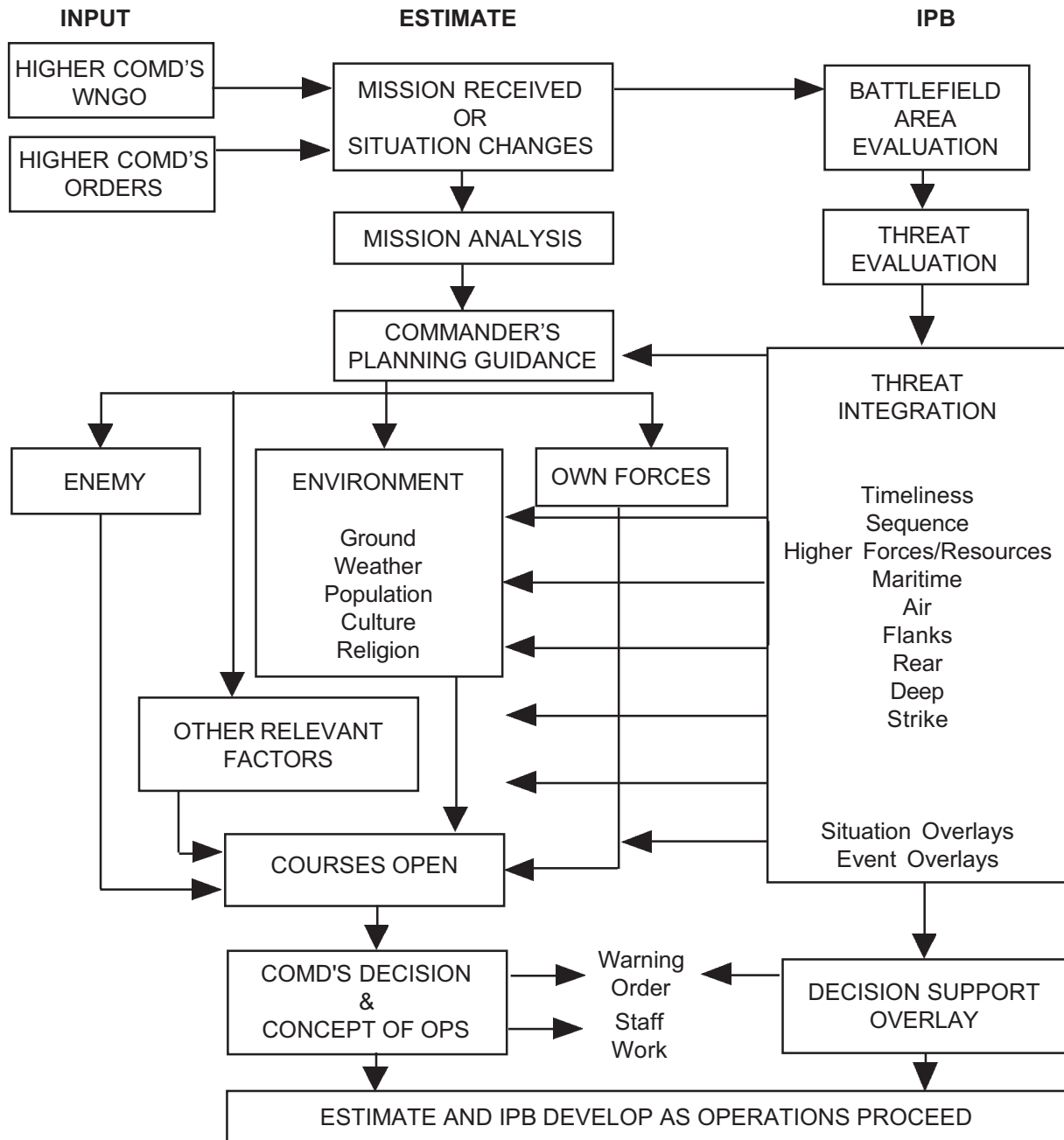
- (3) The decision on where to establish the main effort will depend on the mission, the commander's freedom of action, the relative strengths and the information available. Ideally it will be established against the enemy's weakness. Once defined at one level, main efforts should be designated at every subordinate level.

c. **The Estimate.**

- (1) **General.** An estimate of the situation is a logical sequence of reasoning leading to the best solution to a problem in the time available. Its purpose is to create a body of information or picture of an operation or battle appropriate to the level of command, which is kept up to date and upon which decisions are made. As the situation changes, so the mission and relevant factors are re-evaluated in a logical manner to validate current decisions or orders and to issue new orders where appropriate. The starting point for the process is usually the receipt of a mission from a superior commander. His superior as to what effect he is to achieve in the operation directs a subordinate commander. At the tactical level, the superior commander's concept of operations should include both his intent and his design for operations. The estimate process, of which mission analysis is only a part, helps the subordinate commander at any level then decide how he will achieve the desired effect.
- (2) **Stages of the Estimate.** The estimate has five stages:
 - (a) Mission Analysis.
 - (b) The Commander's Planning Guidance.
 - (c) Evaluation of Factors.
 - (d) Consideration of Courses of Action (COA).
 - (e) The Commander's Decision.

The key elements of the process are shown diagrammatically at Fig 2-1.

- (3) **Mission Analysis.**
 - (a) The mission is the key element of every order and is defined as 'a clear, concise statement of the task of the command and its purpose.' A subordinate commander should not deviate from his given mission except in exceptional circumstances. In all instances, however, he should act in accordance with his superior commander's intentions. The mission statement when received is therefore analyzed to determine the answers to 4 questions:
 - i. What is the intention of the higher level commander and what is my role in the overall plan?
 - ii. What am I required to do or what essential tasks do I have to complete in order to carry out the mission? This will lead to a deduction of the critical activity required in order to accomplish the mission and includes both *Specified Tasks* and *Implied Tasks*.
 - iii. Are there any constraints?



Notes:

1. This process applies to all staff branches.
2. Information from outside agencies can be fed in at any time.
3. The process is continuous.

- iv. Has the situation changed in principle and would the higher level commander still have given these tasks had he known about the changed situation?
- (b) **Deductions.** Mission analysis is an integral part of the estimate process and not a separate activity. By determining the points listed above, and making the relevant deductions it may generate questions or requests to the higher commander as well as helping to generate the commander's intelligence requirements or indeed, establish logistic priorities. As intentions, tasks, constraints and freedom of action are identified, deductions should be drawn which will assist in shaping the plan. At this stage, unnecessary or impossible tasks may be excluded.
- (c) **Commanders Planning Guidance.** The mission analysis is completed by a restatement of the mission. The commander will also give guidance on the continuation of the estimate and draw up a list of questions, which the staff will need, to address in order to focus their attention on those aspects that are relevant during the estimate process. The commander or, more often, his COS/Executive Officer/Operations Officer will conclude the Commander's Planning Guidance with direction to the staff on the completion of the estimate including the deadline for its completion. This must be complied with to allow the commander time to make his decision.
- (4) **Evaluation of Factors.** Having conducted the mission analysis, a number of factors are considered in a way which allows tasks and constraints to be deduced and then modified, excluding those tasks which are not necessary or are not possible. The factors listed below will invariably be considered though the mission and situation will dictate the emphasis placed on them. Some can also be considered in parallel. For example, whilst the G2 staff are evaluating the enemy the G3 and G4 staff will be considering Friendly Forces, including CSS. Tasks will come principally from Enemy and Environmental Factors (especially ground), Friendly Forces and Security. Constraints are largely derived from consideration of Security and Time. The factors to be evaluated include:
 - (a) Enemy.
 - (b) Environmental Factors (including ground, weather, population, religion, culture).
 - (c) Friendly Forces (including CSS).
 - (d) Security.
 - (e) Time.
 - (f) Any further relevant factors (HNS, legal constraints, media, morale etc).

An assessment of the combat power required to accomplish the essential tasks is now made. Tasks are assessed at the same level of command used in the consideration of factors i.e. two down. The combat power required for each task will often exceed the troops available leading to the deduction that tasks should be sequenced. However, consideration of Courses of Action (COA) may obviate the need to undertake some tasks or to commit a significant component of available forces to them. Thus, only a preliminary check on the combat power required for each task should be undertaken prior to the consideration of COA. This will produce a summary of possible troops to task, though in developing COA it may be necessary to adjust the balance of troops to various tasks to economise in one activity, in order to concentrate force in another. Tasks can only be related to one another in developed COA and therefore the detailed allocation of troops or assets to tasks must follow the Commander's Decision, not precede it.

- (5) **Consideration of COA.** A number of COA may be developed as a result of the estimate process. Contrasting elements of each identified COA should be compared as well as the combat power required to carry them out. Each COA should reconcile the troops available with the troops required from the identification of tasks so far, and include an outline concept of operations with a clear indication of Main Effort. The advantages and disadvantages of COA are considered in relation to the mission and likely enemy COA, taking into account his likely reaction to own courses. Any COA, which does not meet the superior commander's intent, should be discarded. At the tactical level, the practicality of COA can then be checked and compared using the Combat Functions. If time permits, it may also prove useful to wargame the COA to determine likely responses to enemy and own forces actions.
- (6) **Commander's Decision.** As the final step in the estimate process the commander considers the courses of action open to him to accomplish his mission. He selects his COA and expresses it as his decision. From the decision he develops his concept of operations which must include his intent. The commander's decision should embody his will for the conduct of the operation.

d. **The Plan.**

- (1) Once the commander has made his Decision his staff can begin to develop the plan. This involves:
 - (a) Expanding the commander's *Concept of Operations* as necessary. It will include the commander's Intent and his scheme of manoeuvre (an outline of the deep, close and rear operations with a statement of Main Effort) required to achieve the mission.
 - (b) Developing the mission statements for subordinate commanders (normally completed or checked by the commander himself).
 - (c) Carrying out any necessary staff checks including confirmation that the task organization is correct and subordinates have been allocated sufficient resources to complete their missions.

- (d) Determining and defining the control measures needed for the execution of the mission.
 - (e) Coordinating the input from staff branches.
 - (f) Completion of the CSS plan.
- (2) Once a Decision has been made the situation must be monitored carefully while orders are being prepared or disseminated and throughout the execution of an operation in order to confirm the validity of the Mission. It may also be necessary to conduct contingency planning to cater for any perceived eventuality.
- (3) Once an operation is under way the commander and his staff will primarily be concerned with fighting the battle and providing the necessary logistic support to sustain operations. Some consideration must, however, be given to future operations. Mission analysis may, for example, be conducted to review the situation and mission in the light of current operations and to initiate the planning of a new operation.
- e. **Directives and Orders.** The final stage in the command process is *execution*. Directives and orders provide the principal means by which the intentions of the commander are conveyed to his subordinates and so form a critical link in the chain of command.
- f. **Operations Plans and Orders/Instructions.**
 - (1) **General.** Operations plans and orders are the expression of the commander's decision and concept. They should be simple, clear and concise. Plans are normally prepared in writing for future operations, which may or may not occur. Once completed the plan must be communicated to those formations and units that require it by the issuing of directives and orders. Orders are issued in writing when necessary, but ideally orally and preferably by the commander in person. If time is short it may be necessary to conduct the operation based only on brief radio orders containing outline missions. The types of orders for tactical operations are:
 - (a) Warning Orders.
 - (b) Operations Orders.
 - (c) Fragmentary Orders.
 - (2) **Supervision.** Commander and staff supervision of the execution of orders is a continuous process.
 - (3) **Adjustment.** Refinement of plans and orders is a constant process. As the situation changes, additional decisions are required and the process is repeated.

246. **The Targeting Process.**

- a. **General.** Targeting is defined as “the process of selecting targets and matching the appropriate response to them, taking account of operational requirements and capabilities” (AAP-6). It is the mechanism for fusing ISTAR and STRIKE assets such as air, aviation, indirect fire and offensive EW, ensuring that they are properly coordinated and that the most appropriate weapon system is used to attack each target. It is, therefore, a tool for the efficient and effective management of resources and is fundamental in the speed of reaction towards the enemy. Targeting is a G3 responsibility and not simply a G2 intelligence gathering process. It must be a coordinated part of the overall concept of operations.
- b. **Concept.**
 - (1) The principles of targeting can be applied to all operations of war and at all levels of command. However, the full process does require time, staff effort and access to the full range of resources to be fully effective and so it is more readily used at divisional level and above. Furthermore, it is optimized for the engagement of targets in depth rather than the more transitory targets of the close battle.
 - (2) Targeting is not a stand alone process but is an integral part of the planning process and requires the coordinated interaction of several staff branches within an HQ under the direction of G3. To allow this to happen efficiently there must be a central coordinating authority and it may, therefore, be necessary to form a ‘targeting cell’. The cell need not be a permanent grouping but would meet as frequently as necessary.
 - (3) The targeting process begins with the receipt of the mission and continues through the development of the plan. It cannot be isolated from the other planning procedures and is inextricably linked to the estimate. The cornerstone of the targeting process is the cycle of *Decide, Detect, Deliver* and *Assess*. In this way, as many decisions as possible are taken during the planning stage so that, once an operation has begun, the staff without constant referral can take action to the commander for a decision; targets can be engaged as soon as they are identified.
- c. **Methodology.** There are nine distinct steps in the targeting process:
 - (1) **Decide.**
 - (a) **Step 1.** Identify key target areas.
 - (b) **Step 2.** Determine the types of targets to focus upon. This will include:
 - i. **High Value Targets (HVTs).** An HVT is a target the enemy commander requires for the successful completion of the mission. The loss of HVTs would be expected to seriously degrade important enemy functions throughout the friendly commander’s area of interest.

- ii. **High Pay-Off Targets (HPTs).** An HPT is a target whose loss to the enemy significantly contributes to the success of the friendly course of action. HPTs are those HVTs, identified through war gaming and the planning process, which must be acquired and successfully attacked for the success of the friendly commander's mission.
- (c) **Step 3.** Establish how accurately targets must be located, in order to allow engagement by the weapon systems, which might be available. Suspected targets need to remain in the collection plan for more detailed confirmation.
- (2) **Detect.**
 - (a) **Step 4.** Having established the general area in which to focus ISTAR assets, the type of targets on which to concentrate and the accuracy required, the next step is to incorporate this information into the intelligence collection plan.
 - (b) **Step 5.** ISTAR and STRIKE are tied together by identifying which HPTs are to be attacked, when, how and by what means. This is a crucial step because it compels the commander to make decisions, which in many cases determines how he organizes and deploys his forces. Once identified, some targets may require tracking to ensure that they are not lost. Tracking priorities are based on the commander's intent and his targeting priorities which are executed through the collection plan.
 - (c) **Step 6.** Once a target has been attacked it is essential to know how effective the attack has been. During the planning stage, target damage assessment must therefore be included in the ISTAR tasking.
 - (d) **Step 7.** The first active step of the process is to execute the collection plan. During this stage, the information obtained from the ISTAR assets should be used to update the list of HPTs.
- (3) **Deliver.**
 - (a) **Step 8.** The next step is to actually attack the targets. Its success is determined by the accuracy of the planning conducted during the earlier stages.
- (4) **Assess.**
 - (a) **Step 9.** The final step is to establish that the required effect on the target has been achieved. If it has not, all information relevant to that target must be reviewed in order to determine if further action is required.
- d. **Summary.** The coordinated acquisition and attack of enemy targets in depth is central to the success of any operational plan. New weapon systems mean that this is more effective than it has been in the past. In order to make best use of these assets, a planning process

must be used which ensures that the right targets are attacked by the most appropriate weapon systems. The targeting process seeks to achieve this.

247. **Airspace Control.**

- a. The objective of ASC is “to maximise the effectiveness of military operations by promoting the ability of land, air and maritime forces to operate in an efficient and flexible manner with minimum interference and without undue restraint and risk to friendly forces” (ATP-40). ASC therefore has to blend the requirements - often conflicting - of each component to conduct operations throughout its battlespace with minimum constraint from others. The joint force commander will appoint an Airspace Control Authority (ACA). Because of the inter-relationship between air operations, AD and ASC, the air component commander will normally be appointed ACA. He must, in concert with the other component commanders, develop a joint Airspace Control Plan (ACP) which, once approved by the joint force commander, will be promulgated throughout the force via a series of Airspace Control Orders (ACO). Land commanders must continually assess and update their ASC needs, and the ACA must remain responsive to their evolving requirements throughout the operation. However, the resulting ACOs will often have to be compromises, and commanders will have to respect their provisions. There are two basic methods of exercising ASC:
 - (1) **Positive Airspace Control.** Positive airspace control is “a method of airspace control which relies on positive identification, tracking and direction of aircraft, conducted with electronic means by an agency with the authority and responsibility therein” (ATP-40A). Positive control relies upon real time data using facilities equipped with capabilities such as radar, IFF and communications or data links. Positive ASC is very demanding in equipment and manpower, and consequently most ACPs are a blend of both methods. The ACA may assign land commanders volumes of airspace within which they may exercise ASC authority, in line with their operational needs and ASC capabilities. NATO doctrine for ASC is contained in ATP-40/AJP-3.3.5.
 - (2) **Procedural Airspace Control.** Procedural airspace control is “a method of airspace control which relies on a combination of previously agreed and promulgated orders and procedures” (AAP-6). Procedural control includes techniques such as the segmenting of airspace by volume and time and/or the use of weapon control status. It is not reliant on electronic communication with airspace users.
- b. During operations the Joint Force Commander will nominate an airspace control authority that will assume overall responsibility for the control in theatre or for the area of operations. The airspace control authority will be responsible for overall airspace coordination with air, land and sea commanders of all nations. R
- c. The airspace control authority will produce an airspace control plan and then issue airspace control orders on a regular basis.
- d. The control of AD weapons is exercised by the following orders:

- (1) **Weapons Free.** Weapons Free is “a weapon control order imposing a status whereby weapon systems may be fired at any air target not positively recognized as friendly” (AAP-6).
- (2) **Weapons Tight.** Weapons Tight is “ a weapon control order imposing a status whereby weapon systems may be fired only at air targets recognized as hostile” (AAP-6).
- (3) **Weapons Hold.** Weapons Hold is “ a weapon control order imposing a status whereby weapon systems may only be fired in self defence or in response to a formal order” (AAP-6).
- e. AD cells at all levels are responsible for requesting airspace control orders from their superior HQ and for their dissemination to subordinate formations and units. They must be obtained in sufficient time to allow their implementation at the fire unit.
- f. NATO doctrine for airspace control in times of crisis and war is covered further in ATP-40.

248. **Communications and Liaison.**

- a. **Communications.** The maintenance of adequate communications for effective command and control is a vital requirement of modern war. Communications systems may be disrupted by enemy fire, by electronic countermeasures, by the effects of electromagnetic pulse following nuclear weapon detonation and by equipment failure. Commanders should ensure by clear directives that they can exercise command and control in these circumstances. Principles and procedures for establishing communications are contained in STANAG 5048. Unless agreed otherwise, responsibility for establishing communications is:
 - (1) From top down.
 - (2) From left to right.
 - (3) From the supporting to the supported unit.
- b. **Liaison.** The purpose of liaison is to ensure cooperation and successful combined joint action. The liaison detachments must have the necessary language capability and telecommunications links to their own headquarters. Principles and procedures for establishing liaison are contained in STANAG 2101.
 - (1) **Reciprocal.** Liaison should, when possible, be reciprocal between higher, lower and adjacent formations. Liaison must be reciprocal when:
 - (a) A force is placed under the command or control of a headquarters of a different nationality.
 - (b) Brigade size and higher formations of different nationalities are adjacent.

- (2) **Not Reciprocal.** When liaison is not reciprocal, responsibility for its establishment is governed by the following principles:
- (a) From left to right.
 - (b) From rear to front for units of the same echelon.
 - (c) From higher to lower echelon.
 - (d) From supporting to supported unit.
 - (e) From the incoming force to the outgoing force during a relief of combat troops (STANAG 2082 OP), but from the outgoing (passing rearwards) force to the incoming (static) force during Rearward Passage of Lines.

249. **Operational Assistance.**

- a. Operational Assistance is any form of support to combat forces other than fire support or CSS. It can be provided by Air (Counter Air and Air Transport), Aviation (Utility and Transport), Air Defence, Engineers, EW and NBC Defence teams.
- (b) Two principal considerations will influence planning for the provision of Operational Assistance:
 - (1) **Integration.** It is fundamental to the most effective exploitation of combat support capabilities that all missions are designed as an integral part of the commander's plan.
 - (2) **Command and Control.** The best use of combat support assets is only possible where groupings are suitably balanced and possess a Command and Control capability appropriate to the task organization and the mission to be accomplished. In addition, to allow commanders the greatest flexibility in their employment of combat support assets, command should be held at the highest appropriate level. Additional thought should be given to:
 - (a) The time taken to plan, move between and execute functional tasks.
 - (b) Coordination with the supported formation or unit.

250. **Post Conflict Operational Planning.**

- a. **General.** Combat operations are designed to bring an end to conflict. Before the first shot is fired, the commander must have a view of how he desires to end the conflict and preserve the aims achieved. When cessation of hostilities or a truce is called, deployed forces must be ready to conduct post-conflict operations. This transition can occur even if residual combat operations are still underway in other parts of the operational areas. Anticipation and appropriate planning during earlier stages will smooth the transition during this critical period immediately after the fighting ends.

- b. **Definition.** Post-conflict activities are those operations that are conducted in the period following conflict and the cessation of active combat. Activities focused on restoring order, minimizing confusion following the operation, reestablishing the host nation infrastructure, preparing forces for redeployment, and continuing presence to allow other elements of alliance power to achieve overall strategic aims.
- c. **Principles.**
- (1) **General.** The principles of combat service support planning required for post-conflict operations are similar to those required to support combat operations. Post-conflict operations rely heavily on the equipment, personnel, and expertise, which provide service support to manoeuvre operations and forces. Commanders responsible for post-conflict operations should consider the following:
- (a) Foresight.
 - (b) Coordination of Effort.
 - (c) Simplicity.
 - (d) Economy.
 - (e) Flexibility.
 - (f) Command and Control (C²).
- (2) **Foresight.**
- (a) The commander must envision the desired end state of the conflict. He must seek to reduce collateral damage to a countries' infrastructure and its ability to recover following cessation of hostilities, while not violating the principles of war to the extent that he jeopardizes the accomplishment of the mission. For example, the use of weapons of mass destruction will be detrimental to the rapid recovery of a nation. Planning staffs must weigh the operational or strategic necessity of their use considering post-conflict operations.
 - (b) The commander must ensure that his staff begins the post-conflict logistics planning before the commencement of the operation. This planning may not be as detailed as the logistics planning for the conflict support, but should tie into the overall logistics scheme. Some coordinations should be given to the need, if appropriate, for plans to release HNS assets back to the host nation at a time when its requirements for civil logistics will be at their greatest.
 - (c) The commander should plan for the deployment and redeployment of forces, which support the post-conflict operations phase. Forces should be identified that will move into the theatre of operation after hostilities are over for the purpose of post-conflict operations.

- (d) Commanders should ensure the treatment of local nationals is in strict accordance with the recognized laws of land warfare and humanitarian considerations. This may help to lessen the hostility of defeated forces and the civilian population.
 - (3) **Coordination of Effort.** Coordinated C² of the post-conflict logistics effort must receive the same attention and degree of control adhered to in the conflict itself. The logistical contributions and capabilities of alliance members must be effectively coordinated to reduce duplication of effort, to cross-level support capabilities, and effectively use limited infrastructure assets (airfields, port, and rail facilities).
 - (4) **Simplicity.** The simpler the post-conflict operations plan, the more easily it will be understood and the better it can be adapted to meet changing requirements. The use of clearly understood and agreed standing operating procedures covering routine and frequently recurring logistics functions will ease planning and execution. Alliance operations will ease planning and execution. Alliance operations will require as much standardization as possible to ensure interoperability.
 - (5) **Economy.** Logistics resources will never be plentiful. There will be serious shortfalls in manpower, support equipment, material, and movement facilities. Commanders will be required to balance the requirement for the continued support of his own forces remaining in the AOO against the desire to assist local nationals in the occupied nation. This requires the most effective control and economy of effort possible and prioritization of tasks to be accomplished.
 - (6) **Flexibility.** The post conflict operation must be flexible and capable of adapting to any number of contingencies. The logistics plan must be responsive enough to permit changes based on military and political necessity. Military forces must be capable of rapid transition to conflict operations if the situation changes.
 - (7) **C².** It is essential to maintain centralized command and control of the post-conflict operation. Scarce resources must be carefully allocated based on verified needs. Nations will, of course, maintain a degree of autonomy, but the centralized control will dictate the need for the combined staff and commander to exercise coordinated control over the effort. Staff communications must be established with civilian agencies and with government offices, which will be active during post hostility operations to assist in the command decisions to allocate resources.
- d. **Concept.**
- (1) Military forces are extremely well suited for post-conflict operations. They have the skills and staying power to control prisoners, handle refugees, mark minefields, destroy unexploded ordnance, provide emergency health service support, provide emergency restoration of utilities and other civil affairs, and perform other required humanitarian assistance activities. During the post-conflict stage, commanders emphasize those activities that reduce post-conflict or post-crises turmoil and help stabilize the situation until other international, interagency, or host nation agencies assume control.

- (2) Post-conflict operations make demands at every level of command. Company and even smaller sub-units may be called upon to conduct emergency humanitarian assistance and population control, especially in remote areas. Whenever possible, security forces used in post-conflict operations should be units/formations that were not directly involved or engaged in the conflict, which has just ended. These forces should be briefed and/or trained in complex ROE, should understand the requirement for sensitivity in dealing with the civilian population and should project an image of impartiality. These forces will hopefully be more acceptable to the civilians and international community than units/formations that were directly involved in hostilities. Some of the tasks that may be required are:
- (a) Security operations:
 - i. Force protection and security – protection of the force will remain a priority requirement during post-conflict operations.
 - ii. Law and order operations – maintaining law and order and providing assistance to civilian counterparts (within the framework of applicable agreements).
 - (b) Restoration of basic life support systems.
 - (c) Restoration of communications infrastructure (airfields, roads, ports).
 - (d) Return of displaced civilian personnel.
 - (e) Working with International Relief Agencies.
 - (f) Processing and return of enemy prisoners of war (EPW).
 - (g) Transfer of responsibilities to peacekeeping or occupation forces or to reconstituted civilian authorities.
 - (h) Increased medical support requirements.
 - (i) Clearing of hazardous material, explosives, mines, etc (Battlefield Area Clearance).
 - (j) EPW and displaced civilian personnel administrative support.
 - (k) CSS for EPW and displaced civilian personnel.
 - (l) Resolution of boundary disputes and revision of mapping, where possible.
- (3) Successful military operations require detailed planning to achieve success. Commanders and their staffs plan for reconstitution and reorganization as part of any operation or exercise. Post-conflict operations must be planned for and conducted like any military operation. This planning should include the following:

- (a) Identification and refinement of the mission.
 - (b) Allocation and identification of forces for the mission.
 - (c) Material supply and support.
 - (d) Rehearsals.
 - (e) Command and control (C²).
 - (f) Integration of resources of all alliance joint forces and available non-military agencies.
- (4) Planning and conduct of post-conflict operation will rely heavily on the involvement of Civil Affairs (G-5) personnel, CSS personnel, Legal Advisors, Public Affairs representatives, Religious advisors, Diplomatic Staff representatives, Host Nation/ Local government representatives to name but a few.
- e. **Preparation for Redeployment.** Preparation for redeployment is a significant task mirroring the initial deployment, but without base support. Tasks that may require completion could include:
- (1) Local disposal or sale of stores and equipment when recovery is not cost effective.
 - (2) Receipt of surplus stores and equipment from units.
 - (3) Repackaging of stores and equipment for movement out of the AOO.
 - (4) Movement of units, personnel, and equipment out of the AOO.
 - (5) Reception of forces moving into the AOO to replace or reinforce in place forces.
 - (6) The draw down of stores and equipment holdings in the AOO.
 - (7) Withdrawal from local contractors and supply agreements.
 - (8) Repair to aid recovery.
 - (9) Decontamination of any NBC or Toxic Industrial Materials effects.

CHAPTER 3

General Tasks

INTRODUCTION

This chapter contains general tasks elements which are conducted by Land forces in support of their own conventional operations or of the operations of other components. All of these tasks will be conducted simultaneously by more than one component and will therefore be controlled at the Joint level.

SECTION I INFORMATION OPERATIONS

301. **Introduction.** The importance of information in the achieving of military objectives has led to the NATO adopting the concept of Information Operations (INFO OPS) as an integral component of military operations.

302. **Definition.** INFO OPS are defined as “Actions taken to influence decision makers in support of political and military objectives by affecting others’ information, information based processes, C2 systems and CIS while exploiting and protecting one’s own information and/or information systems. There are two main categories of INFO OPS: defensive INFO OPS and offensive INFO OPS, depending on the nature of the actions involved” (AJP-01).

303. **Principles.** The implementation of NATO INFO OPS are guided by certain fundamental principles, which shape the campaign and direct the way in which it is conducted. These are:

- a. **Commander’s Direction.** The commander drives the campaign, and exercises control of all INFO OPS within a framework of timely decision-making and consultation up and down the chain of command to maintain Alliance support. His intent will therefore define the INFO OPS aim, which in turn supports the strategic mission. This aim must specify the end state.
- b. **Coordination.** INFO OPS must be closely integrated up, down and across the chain of command. All elements of INFO OPS must be coordinated and synchronized with other operational activities in order that one activity does not compromise or negate another, particularly between the individual components of INFO OPS.
- c. **Accurate Intelligence.** INFO OPS must be founded on timely and accurate intelligence on all parties to the conflict, and on neutral audiences whose perceptions may influence the outcome of the mission. This intelligence should form the background to the commander’s estimate.
- d. **Centre of Gravity (COG).** INFO OPS must focus on the adversary’s COG, derived from an in-depth analysis of the adversary. At the same time, the commander must identify his own COG and give it the appropriate degree of protection.

- e. **Centralized Planning.** The principle of centralized planning and decentralized execution (within defined lines of operation) at lower levels generally applies to INFO OPS. However, centralized control will be required for activities such as deception when all involved force elements must adhere rigidly to the plan.
- f. **Targeting.** The potential INFO OPS target list is large and diverse, and includes the full array of participants inside and outside the JOA, intelligence, surveillance and reconnaissance (ISR), C2 and command support.
- g. **Timely Preparation.** INFO OPS planning must start early, particularly where shaping perceptions is key to success, because both planning and execution take time, and results can be slow to emerge. Hence, direction, as part of the planning process, must be given at the earliest opportunity. Defensive INFO OPS takes much more preparation as, particularly for CIS, defensive measures have to be built in at the design and manufacturing stage.
- h. **Flexibility.** INFO OPS aim to influence decision-makers, perceptions and C2 procedures and capability. Perceptions, in particular, are susceptible to change with little or no notice. The INFO OPS plan must, therefore, be proactive and flexible enough to respond to other events, particularly to exploit sudden changes in popular mood.
- i. **Target Effects Analysis.** The successful prosecution of INFO OPS relies on continuous evaluation of the effects, short and long term, of its inter-related activities, on the target. This is achieved by the directed collection of all-source intelligence material.

304. **Operations.** At the tactical level, forces are employed to conduct military tasks and gain military objectives. Where INFO OPS focuses on perceptions and attitudes, the tactical level is vital; the actions of a few can greatly influence the perceptions of many.

305. **Scope.** INFO OPS is applicable across the range of military operations, but the COG will inevitably differ, leading to changes of aim for INFO OPS according to the nature of the operation. A key factor in driving the INFO OPS campaign in warfighting operations will be the cohesion and motivation of the adversary. A cohesive adversary with high motivation is less likely to respond to attempts to alter perceptions. In such cases, the INFO OPS COG is likely to be the adversary's Command and Control (C2) infrastructure, and his information and information-based processes, with the aim of denying him the information on which to base his decisions, and destroying or degrading the C2 that enable him to implement them. However, should the adversary suffer from internal divisions or his forces are not fully committed to their cause, then these may form the COG and the INFO OPS campaign would then focus on exploiting attitudes.

306. **Component Parts and Functions of INFO OPS.** INFO OPS is the integrated application of its component parts and associated functions. These are:

- a. **Physical Destruction.** Physical destruction consists of "kinetic" attacks to degrade, deny or destroy key adversary C4I assets and nodes. It can be equally as important to use the adversary's C2 system against him, whether through EW, deception or PSYOPS, as it is to destroy all or part of it. The physical destruction plan must also take account of the OPSEC plan, which may require attacks on certain adversary ISR assets.

- b. **EW.** EW contributes to INFO OPS as a vital source of intelligence, to attack adversary C4I nodes, and as a component (electronic deception) of a deception plan.
- c. **OPSEC.** OPSEC denies critical information to the adversary, preventing him from deducing detailed friendly dispositions, intentions, capabilities and vulnerabilities.
- d. **Deception.** OPSEC denies information to the adversary while deception fills the void with information tailored for his consumption leading to definite, but incorrect, decision-making.
- e. **PSYOPS.** PSYOPS aims to weaken the will of the adversary or potentially hostile audiences, reinforce the feelings of friendly target audiences and to gain the support of the uncommitted target audiences.

307. **Associated Functions.** As well as the military components above, there are two further components associated with, but not integral to, INFO OPS:

- a. **Public Information (PI).** PI is information which is released or published for the primary purpose of keeping the public fully informed, thereby gaining their understanding and support. At the military level, PI addresses NATO activities and achievements, and limits comments on the adversary to factual statements on their activities within the JOA. Any political and other judgmental comments on the adversary, if appropriate, are made at Alliance/NAC level. PI must be coordinated with, but is not a part of, INFO OPS, particularly PSYOPS, to ensure consistency in direction and themes, but a clear separation must be maintained to ensure the independence of PI.
- b. **Civil-Military Cooperation (CIMIC).** CIMIC is all activities undertaken by NATO commanders in war directly concerned with the relationship between Allied armed forces and the government, civil population, or agencies of non-NATO countries where such armed forces are stationed, supported or deployed. Where the capability exists, CIMIC can support INFO OPS, particularly PSYOPS, by providing tangible benefits to the civil population. Examples could include restoration of transport infrastructure or mine awareness programmes.

SECTION II ELECTRONIC WARFARE**308. Introduction.**

- a. Military forces make extensive use of the electromagnetic (EM) spectrum for communications, command and control, weapons systems, surveillance, reconnaissance, navigation, platform and force protection, and other military uses. Characteristically, emissions within the electromagnetic spectrum do not respect the artificial boundaries and borders that separate nations or forces. As a consequence, any nation, which is engaged in any form of military operation, should strive to dominate the use and exploitation of the spectrum within their area of operations.
- b. Operations in the EM spectrum are of concern to all commanders and their staffs. Commanders are assisted by EW specialists who are trained to exploit the EM spectrum and are normally employed in an Electronic Warfare Coordination Cell (EWCC). EW specialists exploit the emissions of an adversary's EM devices and thus, contribute to a commander's overall situational awareness. They have the capabilities for attacking an adversary's command and control (C2) system and so creating uncertainty. Finally, the EW practitioner contributes to the protection of our own C2 systems by providing current information or intelligence on neutral or adversarial emitters and by suggesting the most suitable protection measures.
- c. While this section seeks to outline the significant aspects of EW, defensive tactics, techniques, and procedures can be found in ATP-51 (A), EW in the Land Battle.

309. Electronic Warfare.

- a. EW is a military action involving the use of EM energy, including Directed Energy (DE), to exploit and dominate the EM spectrum or to attack an enemy. It encompasses the interception and identification of EM emissions, the employment of EM energy to reduce or prevent hostile use of the EM spectrum and actions to ensure its effective use by friendly force. The three divisions of EW, namely: *Electronic Warfare Support Measures (ESM)*; *Electronic Countermeasures (ECM)*; and *Electronic Protective Measures (EPM)*, will be covered in greater detail later in the chapter.
- b. EW is an integral part of all military operations. It is directly related to Signals Intelligence (SIGINT) and is one of the pillars of INFO OPS. EW contributes to situation assessment, and operational decision making. It is used to degrade an enemy's command and control systems and his reconnaissance and weapon systems. Further, it makes a major contribution to the maintenance of friendly command and control, reconnaissance, and weapon systems through the application of EPM.

310. Principles of Command.

- a. Modern warfare demands that each echelon of command effectively use the EM spectrum for their own purposes while preventing effective use by the enemy. In this context, EW is an important part of the arsenal of responses available to military commander. The commander is the focal point for all operations and his staff is the central coordinating

authority. From an EW perspective, an Electronic Warfare Coordination Cell (EWCC), the composition of which is dictated by the size of the force, the mission, and the EW resources available, supports the commander. All EW activities for the force are coordinated at the highest level.

- b. The employment of EW is a function of command. EW formation or unit commanders, under command of a superior formation commander, have responsibilities, which include:
 - (1) Developing the EW concept of operations.
 - (2) Planning and coordination.
 - (3) Developing supporting plans.
 - (4) Maneuvers of subordinate units or sub-units.
 - (5) Conduct of ESM and ECM operations with coordination responsibilities for EPM operations.
- c. The senior EW commander will exercise command over his organic EW units in the formation commander's area of responsibility. Additional EW resources allocated to a formation commander in support of an operation may be placed:
 - (1) Under operational command.
 - (2) Under operational control.
 - (3) In support.
 - (4) Under tactical command.
 - (5) Under tactical control.
- d. When operating as part of a joint force, joint command of all land, air and naval EW resources should be established. Where this is not possible, close liaison and direct communications between separate service HQs will be essential.

311. **Principles of Control.**

- a. EW functions are assigned to the staff to enable the commander to discharge his responsibilities for planning and conducting EW operations. The use of EW requires close coordination between operations, intelligence, and CIS staff elements. Generally, a decision must be made concerning the relative value of the intelligence being derived from an enemy emitter versus the tactical value that could be accrued by denying him the use of the emitter through electronic or other action. Thorough and continuous coordination between the operations and IO staff is necessary to ensure the EW will not unacceptably degrade friendly command and control systems.

- b. The EWCC is the commander's mechanism for coordinating EW resources within the campaign area. It is established as an integral part of the operations staff, at whatever level is deemed appropriate, to provide an effective means of coordinating all EW activities related to ESM, ECM, and EPM. The EWCC may exercise operational control of EW assets between supporting formations and units employing EW resources. The staff of the EWCC requires ready access to:
- (1) Operations staff for coordination and operational control of EW resources;
 - (2) Intelligence staff for direction and coordination of the EW effort;
 - (3) IO staff to assure uninterrupted access to communications and information systems; and
 - (4) Other operations and planning cells within the HQs for coordination purposes.
- c. The staff of the EWCC should include representatives from each nation and service providing EW resources in support of the force. To function effectively, the EWCC must have access to a secure area for the handling and storage of sensitive intelligence material. To this end, it requires approved automatic data processing hardware and software systems together with secure voice, facsimile, and other data systems to provide access to EW units and the EWCCs of superior, subordinate, and flanking HQs.
- d. In general, the EWCC is responsible for coordinating the activities of all organic or assigned EW forces. With respect to the Commander's staff, the EWCC requires close coordination with the operations staff, the intelligence staff, the air staff, the CIS staff, and various administrative and logistics staffs as specified in ATP-51 (A).
- e. Responsibilities of the Staff to the EWCC for EW are shown below:
- (1) **Operations Staff.** The operations staff has the responsibility for planning, coordinating and supervising EW activities, except for intelligence aspects. Additional functional detail is provided in ATP-51 (A). In some nations all EW planning and supervision takes place in the CIS staff.
 - (2) **Intelligence Staff.** The intelligence staff advises the Commander and his staff on the intelligence aspects of EW, including deception operations conducted as part of a deception plan. They are responsive to the intelligence and information requirements of the Commander and the operations staff. Additional functional detail is provided in ATP-51 (A).
 - (3) **CIS Staff.** As the coordinator of the EM spectrum for a wide array of communications and electronics resources, the CIS staff have numerous responsibilities. Additional functional detail is provided in ATP-51 (A). In some nations all EW planning and coordination is carried out by the CIS staff.
 - (4) **Logistics Staff.** The logistics staff coordinate logistic support for EW operations and the distribution of EW equipment and supplies.

- (5) **CIMIC Staff.** The CIMIC staff is responsible for determining and reporting the availability of local personnel, materiel, and facilities to support EW missions and potential interference of EW with civilian facilities/services.
- (6) **INFO OPS Staff.** Should an Info Ops staff element be established, then the INFO OPS staff will advise the Commander and EWCC on EW requirements in INFO OPS operations, and report the effects of friendly and hostile electronic actions on the INFO OPS operation.

312. **Communications and Liaison.**

- a. Command and control of EW units is effected through a variety of communications systems that must be reliable, secure and survivable. ATP-51 (A) provides additional clarifying detail regarding the types of communications facilities typically required by an EW unit.
- b. EW units should effect liaison to the right flanking EW unit, and to the next subordinate level EW unit when part of a multi-national formation. Greater detail on liaison can be found in NATO Standardization Agreement (STANAG) 2101.

313. **Electronic Warfare Support Measures.**

- a. ESM is defined as that division of EW involving actions taken to search for, intercept, and identify electromagnetic emissions and locate their sources for the purpose of immediate threat recognition. It provides a source of information required for immediate decisions involving ECM, EPM, and other tactical actions.
- b. Simply put, ESM is the exploitive arm of EW, which it can be thought of as electronic surveillance. It is primarily associated with activities related to detection, interception, direction finding and location of sources of EM energy. ESM provides valuable information on enemy intentions and contributes to the following activities:
 - (1) Intelligence collection;
 - (2) Steerage for ECM operations;
 - (3) Deception and INFO OPS planning; and
 - (4) Tactical or threat warning.
- c. The ESM collection effort can be characterized as follows:
 - (1) It can be used in peace, crisis, and war. Its use in peacetime may be applied to the buildup of an EW database for operations, such as the NATO Emitter Base, and thus, it can contribute to the readiness of formation commanders.
 - (2) It is one of the few tactical information gathering systems, which has the potential to provide cover to the limit of theatrical commanders areas of intelligence interest.

- (3) It provides the only all weather, day/night, long-range information gathering system at the operational and tactical level.
 - (4) It can provide information on enemy capabilities and intentions.
 - (5) It can be covert and clandestine, except for its C2 systems.
 - (6) It exploits an adversary's EM emissions, which are difficult to conceal.
- d. ATP-51 (A) provides additional clarifying details regarding typical ESM roles and missions.

314. **Electronic Countermeasures.**

- a. ECM is the offensive or attack component EW. It is defined as that division of EW involving actions taken to prevent or reduce an enemy's effective use of the EM spectrum, through the use of EM energy. There are three sub-divisions of ECM - Electronic Jamming (EJ), Electronic Deception (ED), and Electronic Neutralization (EN).
- b. EJ is the deliberate radiation, re-radiation or reflection of EM energy, with the object of impairing the effectiveness of electronic devices, equipment or systems being used by an enemy. Coordination of jamming is an operations staff responsibility executed by the EWCC in consultation with the intelligence and CIS staff. It should be coordinated at the highest level of command, but control should be vested in the appropriate operational commander.
- c. ED is the deliberate radiation, re-radiation, alteration, absorption, or reflection of EM energy in a manner intended to confuse, distract, or seduce an enemy or his electronic systems. ED must be considered during the planning phase of any deception plan. It is an operations staff responsibility with assistance from intelligence staff and the EWCC planning staff. The intelligence staff provides information on the enemy use of the EM spectrum, vulnerability, surveillance capabilities, and the enemy's reaction to deception. The EW staff provides the intelligence staff with reports indicating enemy reaction to implemented electronic deception operations.
- d. EN is the deliberate use of EM energy to either temporarily or permanently damage enemy devices, which rely exclusively on the EM spectrum. EN is usually brought about as a result of a directed energy (DE) or Particle Beam (PB) weapon depositing sufficient EM energy on a target so as to render the target, its electronics or both useless. The use of lasers to blind personnel or destroy sensitive optical viewing devices are two such examples. It is characterized by the requirement for line of sight and the instantaneous effects (approaching or at the speed of light).
- e. ATP-51 (A) provides additional clarifying details regarding typical ECM roles and missions.

315. **Electronic Protective Measures.**

- a. EPM is concerned with protecting our own electronic systems from an adversary's EW

actions or from friendly mutual interference. It is defined as that division of EW involving actions taken to ensure friendly effective use of the EM spectrum despite the enemy's use of EM energy. There are two subdivisions of EPM.

- (1) **Active EPM.** Detectable measures, such as altering transmitter parameters as necessary, to ensure friendly effective use of the Electromagnetic spectrum.
 - (2) **Passive EPM.** Undetectable measures, such as operating procedures and technical features of equipment, which are meant to ensure friendly effective use of the EM spectrum.
- b. EPM are the responsibility of all users. For example, the use of radar absorbent camouflage nets by all forces is an effective means of denying the enemy information about what lies beneath the net. It is both EPM and ED at the same time. EW is the proponent for EPM from a coordination and doctrine point of view.
 - c. ATP-51 (A) provides additional clarifying details regarding typical EPM roles and missions.

316. **Information Exchange.** Notwithstanding the exclusive command authority exercised by national commanders over their own formations, all EW units participate in technical information exchange. By this means, technical EW data are reported rearward for in-depth analysis, collation, and dissemination, and forward for steerage and continuity. An EW unit may respond to a request from the technical control system for new data provided the greater priority of the supported commander is not jeopardized. Further detail is provided in ATP-51 (A).

317. **Electronic Warfare Mutual Support Procedures.** Detailed information exchange procedures should be included in the appropriate annexes of contingency plans, generic plans, Allied Publications (AP), and SOPS. Electronic Warfare Mutual Support (EWMS) procedures developed as a result of the planning process should include.

- a. A review of the friendly and adversarial information data elements, which may be exchanged;
- b. Mechanisms leading to the exchange of data during peace, crisis, and war;
- c. The development of peacetime exercises to practice the exchange of data;
- d. Establishment of EW Points of Contact (EWPOC) with adjacent formations and higher and subordinate headquarters for planning purposes, whether EW resources are held or not;
- e. Initial acquisition and maintenance of a thorough knowledge of allied forces EW capabilities;
- f. Exchange of EW liaison teams equipped with appropriate communications;
- g. Establishing and rehearsing contingency plans for the exchange of information of friendly and enemy forces;

- h. The development of communication protocols in accordance with STANAG 5048: “The Minimum Scale of Connectivity for Communications and Information Systems for NATO Land Forces.”
- i. The provisions of secure, dedicated, and survivable communications.

SECTION III SECURITY AND PROTECTION318. **Operations Security (OPSEC).**

- a. **General.** OPSEC is “the process, which gives a military operation or exercise appropriate security, using passive or active means, to deny the enemy knowledge of the dispositions, capabilities, and intentions of the friendly forces.” [AAP-6].
- b. **Concept and Principles.**
 - (1) **Concept.** As it is not possible to conceal every military action in support of an operation, OPSEC concentrates on those activities, which could indicate the existence of an impending operation or its details, or reveal vulnerabilities. The operation is examined in its entirety from an enemy viewpoint, and an estimate made of what the enemy may conclude from any friendly force indicators. These aspects or indicators are called Essential Elements of Friendly Information (EEFI). This enables the commander and his staff to identify security weaknesses, and allows them to set the appropriate security priorities and initiate necessary OPSEC measures.
 - (2) **Principles.**
 - (a) **Enemy Viewpoint.** An OPSEC assessment must be conducted from an enemy viewpoint. The key to identifying critical information is to determine what can be deduced from a particular event or piece of information, hence the importance of identifying and protecting EEFI. Where there is more than one enemy or adversary, care must be taken conduct an assessment from each of their points of view as the value of an EEFI may vary from one enemy or adversary to another.
 - (b) **Critical Information.** OPSEC assessments must identify those critical items of information or events, activities and equipment, which the enemy can use to predict, disrupt or defeat a friendly operation. It is not a process to ensure protection of all information.
 - (c) **Highest Level.** The OPSEC plan must be coordinated the highest level of command involved in an operation. Distribution of OPSEC assessments results should be restricted to the commander of the operation and key members of his staff on “a need to know” basis, as general dissemination could result in individual units taking their own OPSEC measures independently, to the detriment of the overall plan.
 - (d) **Comprehensiveness.** OPSEC must address all aspects of an operation. These include timings, administration, logistics, communications and movement for all elements of the force.
 - (e) **Systems Analysis.** OPSEC examines the security of coordinated programs and procedures. Static or isolated installations, documents, equipment and/

or events are only included in the OPSEC plan when they themselves form, or contribute to, EEFI. Otherwise, they are addressed by standing security measures.

- (f) **Timeliness.** The assessments of vulnerability must be made before, or during planning. They must continuously be revised as developments occur, to pre-empt new threats. OPSEC cannot be successfully imposed after an event as it is difficult to determine what may have been compromised, and thus, implement appropriate measures.
 - (g) **Appropriateness.** An accurate assessment of both friendly indicators and the enemy's ISTAR capabilities is necessary. Measures must be appropriate to the operation. Measures to counter an exaggerated capability can divert much-needed assets from the operation itself.
 - (h) **Acceptability.** OPSEC measures must, as far as possible, appear to the enemy to be part of normal operations. They must not in themselves attract the enemy's attention. OPSEC measures may be part of a deception plan, but if necessary, deception measures may need to be incorporated into the OPSEC plan to disguise certain OPSEC measures.
 - (i) **Flexibility.** The OPSEC plan must be capable of change at very short notice, and should be continuously reviewed to take account of events. The plan must include contingency elements to cover developments as the operation proceeds, and for counter-compromise action.
- c. **Responsibility.** OPSEC is the commander's responsibility. It is a G3 (Operations) function, supported by G2 (Intelligence and Security). A staff component within G3, with the support from the other staff branches, particularly G2, should be specifically responsible for OPSEC. As part of the OPSEC staff's function, they should act as the overall monitoring and reporting point for the OPSEC plan.
- d. **Planning.** The OPSEC plan is planned and executed in five stages. There are four planning stages and an execution stage:
- (1) **Identification of EEFI.** As part of the Intelligence Preparation of the Battlefield (IPB) and the Intelligence Estimate (IE) process, an initial assessment of the enemy's ISTAR capabilities, should be available. The IE should also include an assessment of what the enemy may already know about friendly forces, to avoid wasting time protecting previously compromised information. The commander may include OPSEC as a factor in his Estimate, and provide guidance to his staff as to which aspects of his plan or exercise can or should be disclosed as a contribution to deterrence or deception, and which aspects must be protected. G3, in conjunction with G2, then identifies the EEFI within the commander's plan. This process will also identify the specific indicators, e.g., key vehicles/equipments and activities within these EEFI.
 - (2) **Analysis of Threats.** A detailed analysis of the enemy's ISTAR assets is then

conducted. As part of this analysis, it may be necessary to task comparable friendly ISTAR assets (e.g., IMINT and EW) against friendly forces, to ascertain what an enemy could have detected. The intelligence staff to determine can then conduct a detailed assessment:

- (a) What the enemy is already likely to know or to have deduced.
 - (b) The enemy's capability to detect the EEFI's.
- (3) **Analysis of Vulnerabilities.** This detailed assessment of the enemy's ISTAR capability will enable possible OPSEC measures to be identified to protect the EEFI's. The most desirable measures provide the necessary level of protection at the least cost to operational efficiency.
- (4) **Selection of OPSEC Measures.** Once suitable OPSEC measures have been provisionally selected, it necessary to assess their impact on operational efficiency, and the probable risk to the operation's success if the measure is not implemented, or is unsuccessful. The commander in conjunction can make a final decision on the appropriate OPSEC measures with his G3 and G2 staffs.

e. **Execution – Application of OPSEC Measures**

- (1) **Implementation.** The OPSEC measures detailed in the OPSEC plan should be implemented in strict accordance with that plan. The implementation of measures in accordance with the OPSEC plan is the responsibility of all commanders.
- (2) **Monitoring.** The OPSEC plan should be continuously monitored and re-evaluated as the operation progresses. The Intelligence staff should be specifically tasked to monitor enemy reactions to determine the effect of OPSEC measures. The OPSEC staff will act as the central monitoring and reporting point for OPSEC, and may task friendly assets to monitor the OPSEC plan. e.g., for communications security (COMSEC) breaches. A formal monitoring plan of friendly activities by comparable friendly assets may be necessary.
- (3) **Reviewing OPSEC Measures.** Whenever the failure of an OPSEC measure is suspected, or it has become impracticable, the commander must be informed to allow him to consider modifications to the plan. Failure at one level of command may have disproportionate effects at another level. The OPSEC plan should be reviewed as the commander's priorities change, or when an OPSEC measure fails. The following factors should be considered:
 - (a) Enemy ISTAR developments.
 - (b) Disclosures by Prisoners of War (PWs) or the media.
 - (c) Known or suspected breaches of security.

- f. **OPSEC Measures.** The OPSEC plan will consist of a number of force-wide measures, together with specific measures for individual units, equipments, installations, or areas. The measures selected will be governed by EEFI and whether they need to be protected or controlled. OPSEC measures may be applied for the whole operation, or for a specific stage of the operation. The OPSEC measures selected for an operation should be assessed against the anticipated enemy ISTAR threat. OPSEC measures fall into four categories:
- (1) **Active Measures.** Active measures are those taken to disrupt or destroy the enemy's ISTAR capability, eg additional air defence against IMINT platforms, or aggressive patrolling.
 - (2) **Deception.** At the operational and strategic level, where movements of large formations will occur, which cannot be effectively concealed, deception is likely to form an integral part of the OPSEC plan.
 - (3) **PSYOPS.** PSYOPS can be used to influence the enemy's perceptions of friendly moves and intentions.
 - (4) **Defensive Measures.** Defensive OPSEC measures are protective measures taken to deny information to enemy ISTAR assets, eg personal security, camouflage, and concealment, and Media Security Policy.
 - (5) **Change of Plan.** If other measures have failed or are inappropriate, the plan can be adjusted by changing timings, or moving unit locations, etc.
 - (6) Finally, if there has been a compromise or failure of an OPSEC measure and countermeasures are not practicable, then the commander has two choices. He can either:
 - (a) Ignore the compromise, if the enemy is unable to influence that phase of the operations.
 - (b) Accept the risk if friendly forces are irretrievably committed.
- g. **Command and Control.**
- (1) **Evaluation.** The distribution of OPSEC results should normally be restricted to the commander of the operation/exercise.
 - (2) **Written Orders.** Written orders prepared for the conduct of major operations/exercises should normally include an OPSEC annex, including taskings to subordinate units. Key measures can also be incorporated into the main body of the orders. The plan should include monitoring and reporting procedures for OPSEC breaches. The OPSEC annex may need to be produced and distributed as a series of separate Appendices. These will be coordinated and synchronized with the other elements of INFO OPS/C2W.

319. **Electronic Warfare.**

- a. **Electronic Protective Measures (EPM).** The protective measures employed by operations and users of communications and non-communication systems are dealt with in Section II to this Chapter.
- b. **Countersurveillance.** Electronic warfare support to countersurveillance operations can provide the commander with the locations, activities, and targets of enemy electronic surveillance devices.
- c. **Counter Weapon-Guidance.** Electronic warfare support to counter weapon-guidance primarily consists of obtaining information on the guidance systems of enemy weapons systems to allow the development of self-protection measures. The implementation of these self-protection measures, some of which are electronic, is the direct responsibility of the threatened user. Electronic attack of enemy guidance systems is also a way of self-protection.

SECTION IV DECEPTION

320. **General.** Deception is defined as those measures designed to mislead the enemy by manipulation, distortion, or falsification of evidence to induce him to react in a manner prejudicial to his interests (AAP-6).

321. **Aims of Deception.** The aims of deception are:

- a. To gain surprise.
- b. To maintain security.
- c. To enhance a commander's freedom of action to carry out his mission.
- d. To mislead the enemy.
- e. To reduce friendly casualties and minimize expenditure of time and resources.

322. **Levels of Deception.** Deception can be carried out at strategic, operational, and tactical levels:

- a. **Strategic Deception.** This is designed to mislead the enemy on the time, place, strength, and nature of intended operations at the highest level. In combined joint operation, it would normally be planned at national or theater level.
- b. **Operational Deception.** This covers measures to mislead the enemy about conduct of operations. It may complement a strategic deception plan.
- c. **Tactical Deception.** This incorporates all measure to mislead the enemy on land, sea, or air.

323. **Types of Deception.** Deception measures are categorized as either *offensive* or *defensive*. This distinction illustrates the purpose for which the measures are used rather than the nature of the measures themselves, some of which may be used either offensively or initiative.

- a. **Offensive Deception Measures.** These are used for the active dissemination of false or misleading information to the enemy in order to mislead him about future intentions or to otherwise put him at a disadvantage. The prime purpose of offensive deception is to achieve surprise, and maintain the initiative.
- b. **Defensive Deception Measures.** These offer false or misleading information to an enemy who holds the initiative. Actions are taken to divert his attention and effort away from genuine dispositions and targets. The prime purpose is to improve security and set the conditions for future operations.

324. **Principles of Deception.** The principles of deception are:

- a. **Aim.** Deception must have a clearly defined aim, which specifies the desired results and supports the real operational plan.

- b. **Centralized Control.** Success depends on a high degree of coordination and cooperation between staffs and staff branches in the planning, execution, and monitoring of the deception plan. Uncoordinated deception schemes can cause dangerous confusion amongst friendly forces and can compromise the deception plan itself by revealing to the enemy obvious disparities in activity.
- c. **Preparation.** Deception must be directed at a specific human target, which is normally the enemy commander and his staff and be based on their likely reactions. Success presupposes detailed prior knowledge of the target and his procedures. All the measures needed to support and monitor the deception scheme must be thoroughly prepared together with calculation of the target's reaction to each phase. Forces must be allocated to tasks.
- d. **Credibility.** Deception must never be seen as incongruous or illogical and must, where possible, accord with the pattern of events the enemy has reason to expect. When this is not possible, false information, which may make the enemy suspicious, must be supplied to him directly and in a way that he can work out the implications for himself. Conclusions derived from false information by deductive analysis carry more conviction if regarded by an enemy intelligence analyst as the result of his own astuteness.
- e. **Corroboration.** False indicators must be presented to the enemy through as many as possible of his sources. Confirmation for these multiple sources must not produce so gratuitous or complete a picture as to arouse suspicion, but must be sufficiently persuasive for him to take the bait.
- f. **Flexibility.** Flexibility is required to take advantage of the enemy's reactions, both predicted and unforeseen. In the event of the deception's failure or only partial success, flexibility is also required either to abandon or change the deception plan without revealing its original aim. To ensure, and if necessary, benefit from this flexibility, the controlling staff must continuously monitor deception plans.
- g. **Timing.** The timing of deception is crucial. The enemy must be given sufficient time to notice, interpret and react to false information, but not so much time so as to be able to analyze it so thoroughly that the deception and its purpose become apparent. Deception plans should be timed to create maximum disadvantage for the enemy at the decisive moment of real operations unbalancing him so that he cannot use his resources efficiently, nor react in sufficient time to our own actions.
- h. **Security.** Even though deception entails the release of false or misleading information to the enemy, the principle of security must still be applied. Information has to be released to the enemy in such a way that the absence of normal security rules does not arouse suspicions. More importantly, the deceptive purpose of the information released must be strictly concealed from the enemy. To this end, it is necessary to restrict access to plans and to brief on a "need to know" basis. Who needs to know what about deception is often a matter of fine judgment, but it may, at times, be necessary to conceal from friendly forces the true purpose of their operations. Security of real plans is a clear corollary of deception and whenever indications of genuine activity cannot be wholly concealed, they should be discredited by inferring that they are part of an obvious deception plan.

325. **The Deception Target.** The deception target is the mind of the enemy commander and his staff whose decisions will lead to the fulfillment of the deception plan. Targets will appear at all three levels of deception. Considerations are as follows:

- a. **The Human Mind.** The human mind has several tendencies, which make it susceptible to deception: preconceived ideas, wishful thinking, desire to clarify uncertainty, tendency to filter information and the hypnotic effect of regular information.
- b. **Time.** No target can be deceived forever. All deception has a limited and usually short life span before it is exposed. The sophistication required be directly related to the length of time over which the deception has to be sustained.
- c. **National Characteristics.** Knowledge of a target's national characteristics is valuable in determining its susceptibility to the to the deception techniques.
- d. **Target's Intelligence Base.** An essential part of the staff's pre-hostility duties is to assess the enemy's interpretation of the evidence available to him and the deductions he may have drawn from it.
- e. **Target's Sources of Information.** The sources of information upon which the target's intelligence staff base their advice must be identified. Those sources, which are most easily deceived, should then be selected. The greater the quantity and overlap of the target's sources, the more difficult is the deception task.

326. **Deception Methodology.** The following six-step process should be followed when developing a deception plan:

- a. **Situation. (What is Truth?)** Determine the current situation for both friendly and enemy forces and estimate the enemy's course of action if no action is taken.
- b. **Objective. (What is the Deception Objective?)** Determine the commander's mission objectives and then settle on the deception objective, which will best support, it. The deception objective will always be stated in the form of action desired from the enemy commander in response to the deception. The enemy decision-maker must be identified during this step.
- c. **Perception. (What do we want the Enemy to believe?)** During this step, the planner determines the desired perception he wants the enemy commander to form, which will cause him to take the desired action identified in the Objective.
- d. **Story. (What do we tell Him?)** A deception story is the false information that causes the enemy to estimate the situation incorrectly. He may then make an incorrect decision that places him at a disadvantage. Often, the deception objective can be met if the deception story merely lengthens the enemy commander's decision cycle. For the story to be successful, it must be believable, verifiable, consistent, and simple.

- e. **Means. (How do we tell Him?)** This step identifies the methods, techniques, and resources, which can be used to convey or deny information to the target. A complete understanding of the enemy intelligence-gathering apparatus, decision cycle, preconceptions about friendly intent and capabilities, and enemy doctrine is a prerequisite for success.
- f. **Feedback. (Is anyone listening?)** This last step is the most difficult to develop and at the same time, the most critical to the success to the plan. The commander requires an evaluation of the enemy's response to the deception plan on as near real-time basis as possible. This feedback not only allows the commander to determine whether the deception is being seen and believed, but more important, whether it is being acted upon.

327. **Counter-Deception.** In operations, there is also a requirement for a counter-deception officer to work in an all-source or fusion cell. His function will be to establish the enemy's own deception efforts from the wealth of information entering the cells. The following measures provide the basis for a defense: awareness, knowledge of the enemy, an open mind, skepticism, resistance to jumping to conclusions, sustained search for corroboration, attention to intelligence procedures, mistrust of automated interpretation, and the devil's advocate approach.

SECTION V PSYCHOLOGICAL OPERATIONS (PSYOPS)

328. **General.** Psychological Operations (PSYOPS) are defined as: “planned psychological activities in peace, and war directed to enemy, friendly, and neutral audiences in order to influence attitudes and behaviour affecting the achievement of political and military objectives. They include Strategic Psychological Activities (SPA), Psychological Consolidation Activities (PCA), and Battlefield Psychological Activities (BPA)” (APP-6). Target audiences may be the military or civilian population of hostile or neutral nations, an adversary commander and his staff and also friendly military or civilian populations. PSYOPS intent and activities vary with the mission and target audience. R

This chapter describes the purpose and categories of PSYOPS, and provides guidance to commanders and staffs involved in allied joint operations on their planning and implementation. In such operations, although PSYOPS are a key function in INFO OPS it is important that they are closely coordinated with the entire staff, particularly where PSYOPS activities extend beyond actions coordinated by the INFO OPS staff. Coordination must be effected at the strategic, operational, and tactical levels in order to preserve credibility and consistency of effort in the overall allied joint campaign.

329. **Mission.** The purpose of PSYOPS is:

- a. To weaken the will of the adversary,
- b. Reinforce the feelings of the loyal, and
- c. Gain the support of the uncommitted

By influencing the attitudes and behaviour of targeted audiences.

330. **Nature of Operations.** Psychological operations may be offensive and/or defensive in nature.

- a. **Offensive.** The aim is to weaken the will of the enemy's troops or civilian population. Weak points in the enemy's political, economic, social or military situations are identified and evaluated for importance, accessibility and vulnerability. A coordinate, consistent attack is then launched at the selected target audience using carefully chosen, credible and, if possible, simple themes designed to draw attention to the selected weakness and thus erode enemy morale. The attack is delivered through the complementary use of various actions and media: radio, television, press reports, magazine articles, speeches, poster campaigns, leaflets and actions taken by a commander primarily for their psychological effect. If planned and executed properly, the attack will create doubt in the enemy's mind: doubt regarding the righteousness of his cause, competence and integrity of his leaders, dependability of his allies, outcome of the war and, most important, the likelihood of his own survival.
- b. **Defensive.** The aim is to protect the morale of the friendly population and to win the support of neutral or uncommitted groups. Themes selected for these tasks aim to reduce the enemy's real or potential prestige, counter the effects of his propaganda and inform about our own intentions and measures.

331. **Characterization of Operations.** PSYOPS are planned operations conducted to convey selected information and indicators to foreign audiences to influence their emotions, motives, objectives, and reasoning and ultimately to influence the behavior of foreign governments, organizations, groups, and individuals. The purpose of PSYOPS is to induce or reinforce foreign attitudes and behaviors favorable to the originator's objectives.

a. **Characterization by Apparent Source.** Black, gray, and white activities reflect any information, ideas, doctrines, or special appeals disseminated to influence the opinion, emotions, attitudes, or behaviour of any specified group in order to benefit the sponsor either directly or indirectly.

- (1) Black. Propaganda which purports to emanate from a source other than the true one (AAP-6).
- (2) Grey. Propaganda which does not specifically identify any source (AAP-6).
- (3) White. Propaganda disseminated and acknowledged by the sponsor or by an accredited agency thereof. (AAP-6).

b. **Characterization by Objective.**

- (1) Cohesive PSYOPS are directed at friendly and neutral audiences with the aim of creating goodwill, understanding, friendship, confidence, and cooperation.
- (2) Divisive PSYOPS are directed at the enemy target audience with the aim of lowering morale, creating apathy, defeatism, and discord and promoting dissension, subversion, panic, uncertainty, defection, and surrender. Weak points in the adversary's political, economic, social, or military situations are identified and evaluated for importance, accessibility and vulnerability. A coordinated, consistent attack is then launched at the selected target audience using carefully chosen, credible and, to the extent possible, truthful and simple themes designed to draw attention to the selected weaknesses and thus, erode the opposition's morale. The attack is delivered through the complementary use of various media: radio, television, magazine articles, speeches, poster campaigns, leaflets, or weapon systems. If planned and executed properly, the attack will create doubt in the adversary's mind: doubt regarding the righteousness of his own cause, competence and integrity of his leaders, the effectiveness of his equipment, his own abilities, dependability of his allies, outcome of the war and, most important, the likelihood of his own survival.

332. **Counterpropaganda PSYOPS.** The aim of counterpropaganda PSYOPS is to shield audiences from hostile messages or lessen their impact. Counterpropaganda PSYOPS uses assets to analyze the adversary's propaganda and its effect on the friendly population and the allied joint force. Analysis of propaganda source (black, grey, and white), content, intended audience, media selection and effectiveness are done using subjective and/or objective methods. Subjective methods are based on the background, experience, and judgment of the analyst while objective methods use classification systems and statistical databases over a period of time. Themes are identified and techniques are employed to counter the effect of the opposition's propaganda. COMAJF direction and subsequent

close coordination is required between PSYOPS and PI staffs in the employment of counter PSYOPS techniques. Themes selected for this purpose aim to reduce the adversary's real or potential prestige, counter the effects of his propaganda and inform about the allied joint force's intentions and measures.

333. **Types of Operations.** In accordance with the agreed NATO definition, there are three categories of PSYOPS, Strategic Psychological Activities (SPA), Psychological Consolidation Activities (PCA), Battlefield Psychological Activities (BPA), and a new category, Peace Support Psychological Activities (PSPA). These classifications have been established primarily to facilitate division of responsibility between national authorities, host nations and operational commanders. The NATO military authorities are primarily responsible only for the conduct of Battlefield Psychological Activities (BPA) for combat operations. Useful as they are in this respect, it should be kept in mind that PSYOPS do not lend themselves to easy compartmentalization. In practice, there is much essential overlap between the three types of activities:

- a. **Strategic Psychological Activities (SPA).** These are high level (i.e., national government level) psychological operations conducted in peace, crisis, and war, which pursue objectives to gain the support and cooperation of friendly and neutral countries and to reduce the will and the capacity of potentially hostile countries to wage war. Conduct of strategic psychological activities is a national responsibility.
- b. **Psychological Consolidation Activities (PCA).** PCA are planned psychological activities in crisis and war directed at the civilian population located in areas under friendly control in order to achieve a desired behavior, which supports the military objectives and the operational freedom of the supported commanders.
- c. **Battlefield Psychological Activities (BPA).** BPA are planned psychological activities conducted as an integral part of combat operations and designed to bring psychological pressure to bear on enemy forces and civilians under enemy control in the battle area, to assist in the achievement of operational and tactical objectives.
- d. **Peace Support Psychological Activities (PSPA) (AAP-15).** PSPA are planned psychological activities conducted as an integral part of peace support operations, designed to create a supportive atmosphere and a willingness to cooperate among the parties in conflict and civilian population in the area of operations, to protect the force and assist in the achievement of mission objectives.

334. **Essentials of Psychological Operations.** The following factors will affect COMAJF's PSYOPS campaign:

- a. **Selection of Suitable Target Audiences.** The potential targets of PSYOPS are, for example, political, social, cultural, ethnic, religious, or military groups. The scarcity of PSYOPS resources normally necessitates careful selection of which target audiences should be addressed. The following should be considered:
 - (1) The vulnerability of a particular audience to a psychological approach, i.e., can they be persuaded or influenced?

- (2) The ability of that audience to produce the desired response either by themselves or in other groups.
 - (3) The accessibility of that audience to the various forms of the media available.
- b. **Selection and Development of Credible Themes.** When vulnerable, effective, accessible target audiences have been selected, similar care must be taken in the selection of themes. There are three major considerations:
- (1) Themes must be believable. To achieve this credibility, they must be based on detailed background information and an accurate knowledge of the current situation. In the long run, the best single assurance of credibility is respect for the truth. Truth is a requirement in PSPA.
 - (2) Chosen themes must support COMAJF's mission, the supporting PSYOPS objectives, and support the allied joint force's cause.
 - (3) Themes must urge the target audience to adopt an attitude that they are capable of accepting and acting on. In other words, they should lead to a course of action that seems reasonable and realistic to the target audience.
- c. **Coordination of Operations.** PSYOPS themes will be perceived by target audiences as expressions of national policy and Alliance policy. Any inconsistency between themes used by different agencies or at different levels may discredit the operation and damage the allied joint force's cause. To prevent this, careful coordination of PSYOPS is paramount.
- d. **Timeliness.** Psychological activities conducted at the correct moment, will significantly enhance or, if required, minimize the impact of operations. Conversely, if badly timed, it may prove ineffective or actually strengthen an adversary's cause. The PSYOPS staff must be able to analyze the adversary's psychological situation, identify suitable target audiences, select themes, then prepare, coordinate and execute operations as the situation develops. They must do so with the speed necessary to take advantage of transient opportunities. PSYOPS, unlike other forms of operation, seldom produce immediate results. Time is required for ideas to mature, or to erode an adversary's morale, or foster cooperation among former warring factions, and hence increase the allied joint force's effectiveness. PSYOPS should therefore, be initiated at the earliest practicable time. Because SCs are limited to conducting BPA or PSPA, it may not normally be possible to begin PSYOPS prior to the start of operations. However, given that PSYOPS can be a combat preventer, which can save lives, it is always advantageous to begin operations as early as possible. When possible, PSYOPS activities should be initiated prior to the introduction of forces into the area of operations.
335. **Planning and Implementation.**
- a. **High Level Approval.** More than in most activities, PSYOPS require coordinated, high level planning and approval. It is a fundamental requirement that PSYOPS plans are approved at the highest practicable political and military level. Centralized planning for

BPA and PSPA should be focused at the RC level. Plans should identify enemy weaknesses, PSYOPS objectives, likely target audiences and suitable themes, and provide guidance on the use of the media to reach targets. Prohibition or limitations in any of these matters should also be stated. Once plans are completed, they are forwarded to the SC (either separately or as part of an OPLAN) where they will be reviewed and passed to the NAC for approval as part of the strategic plan. NAC approval of the objectives and themes in the strategic plan constitutes the political guidance required for the conduct of BPA or PSPA. Once plans are approved, they should be executed at every level of command. Failure to observe these fundamental requirements may result in use of contradictory or inconsistent themes which are easily defeated by an adversary or used to highlight divisions in the Alliance, and may even damage the credibility of nations or the Alliance as a whole. The requirement for high level approval restricts to a degree the freedom of action of commanders at the operational and tactical levels, but it is a necessary limitation.

- b. **Integration.** PSYOPS are an integral part of strategic, operational and tactical level operations. Plans should be developed early and complement the overall operational plan. The PSYOPS effort must also be coordinated with CIMIC/CIVIL Affairs and the Public Information aspects of COMAJF's campaign, and it should be remembered that the presence of mass media in a theatre of operations means an overlap of information between audiences. This overlap makes message deconfliction crucial. Care must also be taken to anticipate and minimize any negative impact of PSYOPS actions or messages or unintended audiences, including the soldiers of the allied joint force.
- c. **Command and Control.** The SC commander may place psychological operations forces under operational control of COMAJF or a component commander for appropriate mission support. Usually, a Combined/Joint PSYOPS Task Force will be established as a component of the senior command in theatre. It is essential that all PSYOPS products (such as radio scripts or printed materials) use consistent information, themes and symbols, necessitating a single approval process and authority for all BPA or PSPA.

SECTION VI PUBLIC INFORMATION

336. **General.** Public Information is a command responsibility, which supports NATO military operations, events and activities. Commanders at all levels and echelons are responsible for informing military forces, civilian employees, and the public about their missions, how they support NATO policies, and the activities in which they engage to accomplish the mission. Commanders also promote and maintain congenial relations with the commercial media as a means of reaching the general public. Commanders normally delegate authority to carry out these responsibilities to their Public Information Officers (PIOs). The Commander and the Chief of Public Information are the designated official spokesman for their command. The Publication Information Officer will have direct and immediate access to the commander at all times.

- a. Public information at the operational level must be developed within the larger concept of information at the strategic and political levels, which may, in reality, represent a limitation in the military commander's initiative in theatre.
- b. The specific 'sensitivity' of each nation's public opinion must be taken into account in all NATO operations, which may be effecting several Alliance member states. Moreover, the commander will not 'delegate' his authority in this area to the PIO, but has at his disposal, a PIO who may advise him and conduct the detailed management of the information policy laid down by the commander.

337. **Mission.** The definition of Public Information is "Information which is released or published for the primary purpose of keeping the public fully informed, thereby gaining their understanding and support." (AAP-6). The Public Information mission is to fulfil NATO's obligation to keep NATO member nation populations, NATO military forces, and civilian populations informed, and to help establish the conditions that lead to confidence in NATO, its forces, and its conduct of operations in peace, conflict, and war. It involves information at both tactical and operational levels. This information encompasses:

- a. External information: the information directed at all forms of media.
- b. Internal information (current affairs): for personnel belonging to the force.
- c. Information for families and members of the forces who warrant special attention (this is a particularly important area of concern in the shaping of national opinion).

338. **Global Information Infrastructure.**

- a. The media's technical capabilities, operating practices and worldwide audiences have now combined to form the Global Information Infrastructure (GII). The GII relies on immediate television, radio and wire service coverage of military operations anywhere in the world. With satellite transceivers, light-weight equipment, and independent power sources, a large number of media can and will operate in remote environments without relying on military organizations for logistical support or technical requirements. Increasing numbers of newspapers, magazines, and other periodicals also provide in-depth coverage of events and actions.

- b. The increase in personal communications capabilities-smaller, more portable, more powerful, more affordable tools – enable an ever expanding number of individuals to communicate with increasing freedom. Individuals can now communicate world-wide using a vast array of digital and electronic communications devices that are almost impossible to control. This allows almost anyone, anywhere in the world to spread any message quickly, without the influence of analytical filters or censorship. The GII is pervasive, interactive, and continuous.
- c. The GII has an impact on military operations, because of the potential speed of reporting NATO operations, actions, or incidents. The degree of this reporting of events is pervasive and often seriously influences critical audiences at national strategic decision-making levels. Additionally, news and information in the GII is communicated across a broad spectrum – what is communicated to one audience can be communicated to all audiences.

339. **Media Access, Inclusion, Censorship and Security Synchronization.**

- a. In general, open media access and independent reporting of NATO military operations and forces is the preferred method of dealing with the media. Media capabilities, the large number of media representatives and the relative scarcity of PIOs and trained media escort officers will reduce the utility and possibility of escorting media in every instance. Commanders, staffs, non-commissioned officers and NATO forces personnel need to be ready to meet with the media, escort media within their own units, and reply to media requests and queries in accordance with NATO guidelines and ground rules. Restricting media movement, or attempts at coverage, for reasons of ensuring their personal safety is not an adequate reason for excluding them from covering NATO operations or actions.
- b. One desirable and proactive method of dealing with the media is by inclusion or “attaching” accredited media to NATO units and organizations following coordination with NATO PIO personnel. The media would spend a set amount of time with the unit, providing in-depth coverage. They would have an opportunity to bond with the unit, and would be less willing to risk the unit with disclosure of sensitive information. National media, both print and electronic, should be allowed to provide nationally unique coverage of member state contributions to NATO organizations and operations.
- c. Media output will not be subject to censorship or review by NATO personnel, including media reports transmitted via NATO communications channels, but media reports, stories, or information transmitted via NATO forces communications channels will be subject to security review. This review will identify material or information, which compromises operations security (OPSEC), jeopardizes current or future operations, identifies forces weaknesses or will provide opposing forces, hostile nations, or organizations with information, which could be harmful to NATO forces. Media products will not be censored to protect NATO, commanders, staffs, NATO force personnel or employees from embarrassing situations, mistakes, or similar information.
- d. Security of sensitive or classified information will be protected at the source. Commanders, staffs, NATO force personnel and employees will protect sensitive and/or classified information or material from improper disclosure to media and the general public. Even if

media representative disclose knowledge of sensitive or classified information, plans, or communications, NATO personnel will not confirm this information. NATO personnel at all levels will report any compromise of security of classified information immediately to the unit PIO in accordance with standard procedures.

340. **Synchronization.**

- a. Public Information, CIMIC and Psychological Operations (PSYOPS) must be closely coordinated, although each is a distinct functional area with different objectives with regard to their targeted audiences. Public Information can assist CIMIC in dealing with local media and informing the local (host nation) audience. Public Information, CIMIC and PSYOPS staff must coordinate their actions to ensure that messages, methods, or actions are truthful and consistent. Public Information and CIMIC must not be used for PSYOPS purposes.
- b. Public Information should be well planned, rehearsed, and executed to support the commander and the operation. PIOs gather information, prepare statements, anticipate questions, and staff appropriate replies. Once the operation or action begins or is underway, the commander and PIO must already have statements, answers to anticipated questions, and other products, which convey messages supporting the operation and NATO. By means of careful and deliberate preparation, most operations and activities can be addressed using an active public information approach.
- c. An active approach to public information means NATO desires to release information or garner media coverage of action, event, or operation. PIOs actively and aggressively publicize the action, event, or operation, which best conveys the NATO message. An active public information approach allows PIOs to get ahead of the media and release information. This "breaking news" will focus public interest, tends to show NATO in a positive light, and provides a cooperative relationship with media. The media will be using facts and information provided in NATO releases, press conferences or interviews as a basis for their coverage.
- d. A passive Public Information approach can be used when warranted by security or operational sensitivities. Even with a passive approach, PIOs should prepare statements, anticipate questions, and staff appropriate replies. However, in a passive approach, the PIOs do not publicize the operation, action, or event, but rather wait for media interest or queries as a triggering action. In a passive approach, the initiative belongs to the media and PIOs need to be ready to respond quickly to their inquiries.
- e. A prudent commander and PIO prepare contingency statements, possible questions and staffed replies, and a general outline for a public information plan for meeting crisis.

341. **Components of Public Information.** The components of Public Information are Public Information Planning, Media Relations, Command, and Community Relations.

- a. **Public Information Planning.** Due to the GII, Publication Information planning and preparation of the force for operating in the GIE has become critical. Active, accurate, and

complete Public Information Planning will allow NATO commanders to face the realities of media on the battlefield, or in other areas of conflict.

- (1) Public Information Estimate of the Situation. This is an informal planning measure used by Public Information professionals in determining the media situation of an operation. It is similar to an Intelligence Estimate of the Situation, outlining media presence, capabilities, logistics, and communication capabilities.
 - (2) The Public Information Annex to the Operations Order or Plan, outlines how public information will support the Operations Order or Plan (see STANAG 2868). This annex follows the five paragraph field order format, outlining how Public Information will support the basic plan.
 - (3) Public Information Message provides mission specific guidance to support the public discussion of an operation. The Public Information Message (PIM) establishes Public Information policies, identifies likely issues of interest, outlines NATO perspective, recommends appropriate themes, and addresses the methods, timing and authority for the release of information to news media representatives. PIM allows PIOs to plan, staff, and coordinate a Public Information response to a multitude of situations. PIM can be active or passive in approach. The PIM should include:
 - (a) Reference to the message, operations order, or situation, which creates the need for the PIM.
 - (b) A statement concerning staff coordination and the date on which the PIM is needed.
 - (c) A statement of the public affairs approach and the desired release/announcement agency, its location, time, and date.
 - (d) A statement for initial release.
 - (e) Anticipated questions and their replies coordinated.
 - (f) A statement about other related PIM, or contingency statements, for use prior to intended initial release.
 - (g) A statement identifying the author, his organization, phone number, and fax number.
- b. **Media Relations.** Military relations with the media are of major and increasing importance. Media reports and stories can impact on shaping and directing national and international public opinion before, during, and after a conflict. Most importantly, the media can serve as a conduit for the commander to address critical national, international, internal, and host nation audiences. In order to support the commander, PIOs must be prepared to:
- (1) Escort Media to NATO forces for news gathering.

- (2) Arrange Media Conferences/Media Briefings, so NATO can keep targeted national and international audiences informed.
 - (3) Field, staff, coordinate, and respond to media queries regarding NATO operations, policies, or actions.
 - (4) Prepare, staff, coordinate, and issue media releases, fact sheets or photos.
 - (5) Assist commanders, staff, NATO force personnel, civilian employees and dependent families in meeting with the media, responding to media questions and giving interviews with the media. This includes, but is not limited to, training leaders at all levels in dealing with the media.
- c. **Command/Internal Information.** Even with the growth of media in the GII, forces require information and news about operations, friendly forces, command policies, and ongoing operations. Command/Internal Information keeps soldiers, their families and NATO civilian employees informed about goals, operations, actions and policies. Command/Internal Information enhances morale, readiness, cohesion, and performance. Some methods of Command/Internal Information are:
- (1) NATO Organization Newspapers or Newsletters.
 - (2) Command Radio Stations (Armed Forces Network or AFN, for example).
 - (3) Command Television Programming (eg AFN).
 - (4) Officer and NCO Calls.
 - (5) Bulletin Boards.
- d. **Relations with Local Authorities and Populace.** Keeping host nation populations informed concerning NATO policies, actions, and events is critical. Public Information supports CA in conducting Community Relations in periods of war, conflict or other action. PIOs should ensure that news and information are available to local and host nation media, support civic action operations and events with media coverage, and in general, act in support of CA staff in meetings with, and dealing with, local civic groups, community leaders, and interest groups.
- e. Information for the force-members families is a command priority. Means of communication for soldiers may be installed as well as a secure and fast postal service. In some cases, the command must ensure that the families of service personnel are informed before the dissemination of a specific and personal piece of information to the media.

342. **Principles of Public Information.** The following are general guidelines for the execution of operations in the GII. Commanders, staffs, NATO personnel and civilian employees can apply these principles when dealing with media representatives.

- a. Trust is paramount – do not lie to the media.

- b. Every aspect of every operation potentially has Public Information implications.
- c. Restricting access to information is becoming increasingly difficult. NATO forces access to public news and information should only be restricted for reasons of security and force protection.
- d. Information provided to one audience must be available to all – there are not exclusive stories.
- e. Providing information can be desirable.
- f. Not all news will be good news, but there is a good side to most bad news stories (i.e., accident involving injuries, soldiers provide first aid, save lives.).
- g. Media are critical conduits of information and can be an asset to the information effort.
- h. Public Information assets must be deployed early and throughout any operation.
- i. Media interest is not constant.
- j. Media representatives are not adversaries.
- k. Maintenance of security is essential and is a pre-requisite to the success of operations.
- l. Inclusion of media as well as access must be considered and planned.
- m. NATO forces access to public news and information must not be restricted.
- n. Journalists must be accredited by NATO or the participating countries.
- o. Priorities must be given to informing families of NATO force casualties.

343. **Preparation for the Global Information Infrastructure.** NATO personnel at all levels must be ready to meet with and deal with the media. Commanders, staffs, senior NCOs and soldiers must be appropriately “media aware” – trained and ready for the GII. Media representatives want to meet with, talk to, and interview NATO personnel – the people on the ground who accomplishes the missions as well as the senior leadership. Junior NATO personnel who are well trained, prepared, and cared for, can be excellent unofficial spokesmen for NATO to the media. PIOs can provide training tailored to meet the requirements of a military force in the GII. Training should include, but not be limited to:

- a. Individual (for all NATO personnel):
 - (1) Media Today – Capabilities and Methods.
 - (2) Individual Rights Regarding Media (Meeting the Media).
 - (3) How to Answer Media Questions.
 - (4) Security at the Source.

- b. Leader Training (Commanders, designated Staff, Senior NCOs):
 - (1) Planning for Media Encounters.
 - (2) How to convey Command Messages.
 - (3) Giving Interviews.
 - (4) Conducting News Briefings.

CHAPTER 4

OFFENSIVE OPERATIONS

SECTION I FUNDAMENTALS

401. **General.**

- a. Ultimate success in battle is achieved by offensive action. Even in the defence, a commander must take every opportunity to seize the initiative and carry the battle to the enemy. Offensive operations are the decisive operation of war.
- b. Although particularly true of the offence, the principles outlined in this chapter are equally applicable to counter-attacks launched as part of defensive operations or in a meeting engagement, if a commander decides to attack the opposing forces in order to seize the initiative. The elements of an attack which are controlled by the attacker, and which give him an important advantage, are:
 - (1) The selection of the time to attack.
 - (2) The choice of the direction (including the objectives) of the attack and where the main thrust will be.
 - (3) The synchronization and tempo of the attack.

402. **Purpose.** The purpose of offensive operations is to defeat the enemy by the application of focused violence, not only on the enemy's forward elements but throughout his depth. Manoeuvre in depth poses an enduring and substantial threat to which the enemy must respond. He is thus being forced to react rather than being able to take the initiative. Physical destruction of the enemy is, however, merely a means to success and not an end in itself. The requirement is to create paralysis and confusion thereby destroying the coherence of his defence and fragmenting and isolating his combat power. Further purpose of offensive action might be to:

- a. Seize ground.
- b. Gain information - reconnaissance in force.
- c. Deprive the enemy of resources.
- d. Deceive or divert from the Main Effort.
- e. Fix the enemy to prevent him from regrouping or repositioning his forces.
- f. Preempt to gain the initiative.
- g. Disrupt enemy offensive action.

403. **Principles and Factors.** The following principles and predominant factors are of particular importance in offensive operations:

- a. **Intelligence.** The commander requires all available information on the enemy and terrain, including details of approach routes, the objective and the area beyond the objective.
- b. **Audacity.** The commander must be prepared to be bold and to exploit a favourable situation aggressively.
- c. **Surprise.** The attacker has the initiative and can achieve surprise in his selection of the timing and direction of the attack.
- d. **Concentration.** Sufficient combat power must be concentrated quickly to overcome the enemy's defence and penetrate through his defences. Forces should be concentrated where the enemy is weakest or where the terrain offers the best opportunity to make maximum use of mobility and fire.
- e. **Speed and Momentum.** Speed and momentum are essential.
- f. **Control.** The commander must be able to control all phases of the attack.
- g. **Depth.** Depth is required in the organization of the attack.
- h. **Security.** The attack must be launched from a secure base, across a secure line of departure. Attention must be paid to flank security.
- i. **Manoeuvre.** As the forces will move quickly it is essential that there is close coordination between the fire of all weapons. Firepower destroys, neutralises and suppresses; it is essential in defeating the enemy's ability to fight. When combined with movement it allows a force to manoeuvre into a position of advantage in respect of the enemy from which force can be threatened or applied.
- j. **Deception.** Deception seeks to manipulate the enemy's perception of the situation and is used in the offence to:
 - (1) Provide security to the deploying force.
 - (2) Give the offensive commander the opportunity to exercise some influence over the enemy's courses of action.
- k. **Terrain.** The best use of the terrain should be made in order to:
 - (1) Improve observation.
 - (2) Obtain cover and concealment.
 - (3) Obtain better fields of fire.

- (4) Enhance manoeuvre.
- (5) Secure approaches.
- (6) Improve security of forces.
- (7) Hamper enemy movement.
- (8) Establish a base for launching further operations.

I. **Combat Power.**

- (1) Adequate combat power is best achieved by a balanced grouping of arms that is strong in firepower, highly mobile, with good command and control and adequate combat service support.
- (2) In offensive operations, the concentration of superior combat power at the critical time and place, followed by determined exploitation, is usually required to achieve decisive results. A commander will seek to use his combat power by selecting his point of Main Effort where the enemy appears to be weakest.

404. **The Operational Framework.** The tactical commander should attempt to conduct offensive operations simultaneously throughout the depth of his area of operations in order that he is able to manoeuvre and concentrate force and in so doing, attain and maintain the momentum required to retain the initiative. He must therefore plan closely to synchronize his deep, close and rear operations ensuring that, although each may have a different objective, only one is supported as his main effort.

a. **Deep Operations.**

- (1) Deep operations are primarily concerned with finding and fixing the enemy. At the tactical level commanders plan operations in depth to secure advantages in close operations (to 'shape the battlefield') and to protect their forces. This can be achieved by simultaneously engaging the enemy throughout the depth of his area of operations in order to deny him freedom of action and to disrupt or destroy the coherence and tempo of his operations. By attacking enemy formations in depth his combat forces can be destroyed, delayed, disrupted or diverted and by targeting functions such as command, logistics or air defence he can be made vulnerable in areas that friendly forces can exploit. Typical deep operations include:
 - (a) Interdiction by air or indirect fire (including attack helicopter strikes).
 - (b) Air Manoeuvre operations.
 - (c) Surveillance and target acquisition.
 - (d) Command, control and communications countermeasures.
 - (e) Counter battery fire.

- (f) Electronic countermeasures.
- (g) Raids.
- (2) Some of these activities may also be required as part of the close operations and their conduct must be synchronized through the prioritization and integration of the available intelligence collection resources to ensure that the necessary tactical information is available to make critical decisions.
- (3) To ensure unity of effort throughout the theatre of operations, commanders at the operational level may need to coordinate deep operations.

b. **Close Operations.**

- (1) Close operations primarily involve striking the enemy by engaging in close combat in order to achieve a lasting and decisive outcome. In terms of offensive operations they will be conducted by the manoeuvre forces, supported by combat support and CSS forces, who will attempt to seize objectives that permit the defeat of defending forces. This will involve going through or around enemy defences using one or more forms of manoeuvre in order to position forces at the critical time and place to close with and destroy the enemy.
- (2) In order to achieve success, commanders must aim to concentrate force and especially firepower. In order to achieve this, they will need to ensure that they have designated their main effort. For example, it may be necessary to fix part of the enemy force with a frontal attack by a smaller force whilst the main force manoeuvres into a position from which to defeat the enemy. The manoeuvring force will be designated as the main effort in order that they can mass the effects of combat power to achieve a decisive result. The allocation of forces to each task, selection of the location at which the enemy will be destroyed and the tempo of the fight will be decided as a result of the estimate process.

c. **Rear Operations.**

- (1) Rear operations ensure the freedom of action of both committed and uncommitted forces and protect the means necessary to sustain combat operations and support the force. They are necessary to maintain offensive momentum.
- (2) On the less dense battlefield, an offensive operation undertaken rapidly and successfully may result in lengthened lines of communication and a consequent separation from CSS forces. Rear operations will need to be undertaken to ensure that these assets keep up with the manoeuvre forces as best they can as well as working to protect and maintain the supply routes.
- (3) On a more constrained battlefield, rear areas will also be of concern to a formation as they are likely to be the target for enemy deep operations. Forces may have to be allocated to ensure the security of this area in order that CSS forces can continue to support the offensive operations being carried out, thereby helping to maintain freedom of action both during and following an attack.

405. **Types of Offensive Operations.** There are a number of offensive operations directed at specific purposes:

a. **Reconnaissance in Force.**

- (1) The purpose of a reconnaissance in force is to compel the enemy to disclose the location, size, strength, disposition or intention of his force by making him respond to offensive action. The enemy's reaction may reveal weaknesses in his defensive system. Commanders may conduct reconnaissance in force during mobile operations as a means of keeping pressure on the defender by seizing key terrain and uncovering enemy weaknesses. They must also be prepared to seize any opportunity to exploit tactical success.
- (2) A formation may conduct its own reconnaissance in force or do so at the direction of a higher headquarters. It must be strong enough to force the enemy to react though restrictions may be placed on commanders to avoid actions that might precipitate a more decisive engagement. If still engaged once the actual reconnaissance is completed, the force may fix the enemy, attack or withdraw as directed.

b. **Raid.** The purpose of a raid is to destroy or capture a vital enemy asset. Its wider purpose is to disrupt the enemy. It is based on detailed intelligence, involves swift movement into hostile territory and ends with a planned withdrawal. Normally raids are so short in time and distance that only a limited amount of supplies can be carried and maintenance is confined to minor crew repairs. Fire support systems are required to support the raiding force and reduce the enemy's ability to react. Airmobile forces, particularly if they can be supported by attack helicopters, are well suited to this type of attack.

c. **Feint and Demonstration.**

- (1) The purpose of a feint is to distract the attention of an enemy force by seeking combat with it. A feint must be of sufficient strength and composition to cause the desired enemy reaction. It is most effective when it supports the enemy's expectations, when it appears as a definite threat to the enemy, when the enemy has a large reserve that has been consistently committed early or when there are several feasible courses of action open to the attacker. A brigade might well execute a feint as part of a corps or divisional plan.
- (2) By contrast, the purpose of a demonstration is to distract the enemy's attention, without seeking combat. Demonstration forces use fire, movement of manoeuvre forces, smoke, EW assets and communication equipment to support a deception plan.

d. **Counter Attack and Spoiling Attack.**

- (1) The counter attack is "an attack by all or part of a defending force against an enemy attacking force for such specific purposes as regaining ground lost or cutting off or destroying enemy advance units, and with the general objective of denying to the enemy the attainment of his purpose in attacking" (AAP-6). It is likely to be conducted by a reserve or lightly committed forward elements involved in defensive operations

as they afford the defender the opportunity to create favourable conditions for the commitment of combat power.

- (2) A spoiling attack is "a tactical manoeuvre employed to impair seriously a hostile attack while the enemy is in the process of forming up or assembling for an attack" (AAP-6). Like a counter attack, a spoiling attack is similarly directed at enemy offensive operations but with the limited aim of disruption. It attempts to strike the enemy while he is most vulnerable or while he is on the move or forming up prior to crossing his line of departure. When the situation permits, however, commanders can exploit a spoiling attack like any other attack.
- e. **Hasty Attack.** A hasty attack is "an attack in which preparation time is traded for speed in order to exploit an opportunity". (AAP-6) In order to maintain momentum or retain the initiative, minimum time is devoted to preparation, and the forces used for the attack are those which are readily available. There will be little time for reconnaissance and none for rehearsal. Such attacks must, wherever possible, be mounted from an unexpected direction and supported by the concentrated fire of every available weapon. Commanders should issue the briefest of orders and then position themselves well forward to react rapidly to the development of the attack. A quick attack seeks to take advantage of the enemy's lack of readiness, and involves boldness, surprise and speed in order to achieve success before the enemy has had time to improve his defence posture. If momentum is lost a deliberate attack may be necessary.
- f. **Deliberate Attack.** A deliberate attack is "a type of offensive action characterized by preplanned and coordinated employment of firepower and manoeuvre to close with and destroy or capture the enemy". (AAP-6) When a well-prepared enemy defence must be destroyed or penetrated, a deliberate attack is required. The emphasis is on the massing of combat power at the expense of time.

An attack is often preceded by an advance to contact (see Chapter 7, Section I, Transitional Phases), and seeks to continue the aim of seizing and maintaining the initiative. Additionally, a quick attack may occur as a result of a meeting engagement (see Chapter 7, Section II, Transitional Phases). Counter attacks are also employed by a defending force to exploit opportunities to strike the enemy at a decisive time and place to defeat him (see Chapter 5, Defensive Operations). Assuming that the attack has been successful the force will then reorganise and consolidate and, if possible, carry out an exploitation and pursuit.

406. **Forms of Manoeuvre in the Attack.**

- a. **General.** The attack may be directed against the front, flank, or rear of the enemy and may be conducted from the ground, the air, the sea, or in a combination of these. The selection of a specific form of manoeuvre is influenced by the aim, mission, enemy, terrain, weather, troops available, level of command, and time and space. The forms of manoeuvre are:
 - (1) Frontal.
 - (2) Penetration.

- (3) Envelopment.
- (4) Turning Movement.
- (5) Infiltration.
- b. **Frontal.** A frontal attack is "an offensive manoeuvre in which the main action is directed against the front of the enemy forces". (AAP-6). It may be used to overrun and destroy him in position or to fix him in position. Often it is a precursor for penetration or envelopment.
- c. **Penetration.** In land operations, a penetration is "a form of offensive which seeks to break through the enemy's defence and disrupt the defensive system". (AAP-6).
 - (1) Penetration seeks to break through the enemy's defensive position, and seize objectives in depth, thus destroying the continuity of the enemy's defences. The main effort is made on a relatively narrow front.
 - (2) Successful penetration requires the concentration of superior combat power at the point selected for breaching the enemy's defences. It is an appropriate manoeuvre when strong combat forces are available, or when the enemy is over-extended or when his flanks are insecure.
- d. **Envelopment.** An envelopment is "an offensive manoeuvre in which the main attacking force passes around or over the enemy's principal defensive positions to secure objectives to the enemy's rear". AAP-6).
 - (1) The main effort is directed to the enemy's flank or rear, passing forces around one or both sides of (double envelopment), or over (vertical envelopment), the enemy's principal defensive positions. Its aim is either to secure objectives to the enemy's rear, which will subject the enemy to destruction in his principal defensive positions, or to make those positions untenable. In some instances, supporting attacks may deceive the enemy as to the location or existence of the main attack.
 - (2) The main attack is accomplished by avoiding the enemy's main strength en route to the objective and thus striking him from an unexpected direction. Superior mobility and surprise are highly desirable.
 - (3) Forces conducting an envelopment should be deployed in depth, and should secure their flanks to avoid exposure to envelopment themselves.
- e. **Turning Movement.** A turning movement is "a variation of the envelopment in which the attacking force passes around or over the enemy's principal defensive positions to secure objectives deep in the enemy's rear, force the enemy to abandon his position or divert major forces to meet the threat". (AAP-6)
- f. **Infiltration.** "Infiltration is a technique and process in which a force moves as individuals or small groups over, through or around enemy positions without detection." (AAP-6)

- (1) Commanders may use infiltration to attack lightly defended positions or stronger positions from flank and rear, to secure key terrain in support of the main effort, to gather intelligence or to disrupt enemy rear operations.
- (2) Commanders should be careful to avoid alerting the enemy as to their intentions by the position of manoeuvre and artillery units and the effect of fire in support of the infiltration.
- (3) Commanders normally use infiltration in conjunction with other forms of manoeuvre.

SECTION II FORCES AND TASKS

407. **Employment of Combat Forces.** The commander will normally divide his force into a number of components:

- a. **Assault Force.** The strength and type of combat forces that are available to strike the enemy will be a decisive factor in determining the task, the objectives and the task organization to be adopted for the operation.
 - (1) **Armoured Forces.** Armoured forces are particularly suitable for wide-ranging attacks or quick, powerful counter-attacks. They are capable of thrusting deep into enemy positions particularly in rolling, lightly covered terrain. Tanks or mechanised infantry may lead an attack, depending upon the strength and position of the enemy and the terrain. They may also operate as an integrated formation particularly on terrain with limited fields of vision or during periods of poor visibility. Equally, if possible, non-armoured forces should be reinforced with armoured elements to give them covering fire and to neutralize enemy armour. It will often be necessary to adjust the organization of the attacking force as the attack progresses.
 - (2) **Non-Armoured Forces.** Non-armoured forces are used most effectively where the terrain is heavily broken or covered although, when faced by a similar, non-armoured enemy, they are capable of operating successfully in more open terrain. Their value is also dependent on the type of operation in which they are employed. If the opportunity arises they could be used to infiltrate through gaps in the enemy lines to engage him in the flank or rear. They may also be employed to create conditions suitable for an attack by armoured troops.
 - (3) **Armed Helicopters.** Armed and attack helicopters (AH) in a manoeuvre role (air manoeuvre) can conduct close, deep and rear operations in support of the commander's scheme of manoeuvre by attacking the enemy and immediately exploiting any gains. Helicopters can create favourable conditions for the advance of armoured and non armoured manoeuvre forces by controlling the ground ahead through domination by direct and indirect fire. Helicopters can be allocated their own area of operations. They can be given manoeuvre missions in its own right or in concert with ground forces. Helicopters can attack static or mobile enemy forces and are particularly effective in exploiting gains during a pursuit operation. Helicopters can also be given missions such as flank protection, guard force or route and area clearance.
 - (4) **Airmobile Forces.** Airmobile forces can be employed to get past obstacles, to take an important objective by surprise or they may constitute a reserve which can be deployed at great speed. Air mobility provides an additional dimension for ground force manoeuvre (air manoeuvre) and may also be conducted as part of an amphibious operation.
 - (5) **Airborne Forces.** Airborne forces are specifically organized, equipped and trained for delivery by airdrop or air-landing into an area to seize objectives or conduct special operations. They may, for example, be delivered ahead of an attacking force to seize and hold an important objective, such as a piece of key terrain, until either reinforced

or relieved by other forces. In offensive operations they can also be used to conduct an attack on the rear of the enemy positions to cut off his reserves in combination with offensive action by other ground forces, cover a flank or create a sense of insecurity in the enemy's rear areas.

- (5) **Amphibious Forces.** Amphibious forces are employed in operations launched from the sea by naval and landing forces against a hostile or potentially hostile shore. They may be combined with an air manoeuvre, airmobile or airborne operation.
- b. **Flank Protection.** Forces must be allocated to security tasks which include flank protection and the covering of gaps between units. These elements may also be required to provide firepower, to deal with bypassed enemy forces, or to provide protection from ground attack for support units when areas to the rear of attacking echelons have not been cleared.
- c. **Echeloned Force or Reserve.** Forces must be held in reserve to deal with the unexpected and to maintain the momentum of the attack by exploiting success when the opportunity is presented. A commander may also need to increase the size of an assaulting force to allow it to constitute a reserve. Once the original reserve has been committed, another one must be constituted, even if this means a change in the task organisation. Reserves should be located so that they can be deployed swiftly in any direction but are able to avoid becoming engaged prematurely. An airmobile reserve may also be maintained to provide flexibility in the exploitation and pursuit as well as for flank protection. Care, however, must be taken to distinguish between these forces and forces specifically designated for any subsequent phase or phases. These echelon forces can be used to prevent the enemy from penetrating the attacking force, to secure terrain gained by the assault forces, to protect lines of communication, to destroy by-passed resistance and to block enemy reinforcements into the area of the assaulting force. Their most common use is for exploitation and pursuit. Where there are insufficient forces to permit the commander to retain an uncommitted reserve then some form of double earmarking may be required.

408. **Employment of Combat Support Forces.**

- a. **Fire Support.** The success of the attack depends upon the close coordination of the fire support from all the weapons available to the attacking forces, and the overall commander must ensure constant coordination of fire support across the whole attack front. The weight of fire is switched, as necessary, and concentrated in accordance with the commander's plan. The following considerations should be borne in mind:
 - (1) If the attack is to use surprise, fire support may be withheld until enemy resistance is encountered, unless it forms part of the deception plan.
 - (2) Some enemy positions may be neutralized or masked by smoke in accordance with the attack plan.
 - (3) If the enemy position is particularly strong, preparatory fire may be necessary. The purpose of this will be to destroy as much of the enemy force as possible before the start of the attack.

- (4) Interdiction fire may be used to close-off the immediate battle area.
- b. **Artillery.** The correct use of artillery and the other elements of fire support is key to the success of the attack. Artillery may be deployed forward during preparations for the break-in battle and once the attack commences will follow the combat troops in such a way that there is no break in the supporting fire. It is vital that the whole ISTAR system is coordinated and directed towards the acquisition of critical targets and the fire support systems able to strike them as soon as they are located. Only by destroying key battlefield functions in the enemy deployment will friendly forces be able to launch an attack with a reasonable chance of success. During the attack the artillery may be required to carry out a number of specific tasks including:
- (1) **Preparatory Fire.**
- (a) Neutralise or destroy enemy artillery.
 - (b) Mask enemy observation.
 - (c) Suppress enemy air defence.
 - (d) Illumination of the battlefield.
- (2) **Covering Fire.**
- (a) Isolate the close battle.
 - (b) Neutralize the enemy at the point of breaking-in.
 - (c) Give fire support to combat troops as they fight through the enemy in depth.
 - (d) Destruction of enemy armour.
 - (e) Be on call during consolidation.
- (3) **Defensive Fire.**
- (a) Neutralize threats from the flanks.
 - (b) Engage enemy counter attack forces.
 - (c) Block through the use of scatterable mines.
- c. **Naval Gunfire Tasks.** If available, naval gunfire can contribute extensively to the overall fire support of the operation, performing the same tasks as land based artillery.
- d. **Air.** Air support is a vital component in the conduct of offensive operations. It is capable of providing a favourable air situation for deployment and movement and can identify, disrupt and destroy enemy forces at long range. It achieves this through:

- (1) **Air Intelligence Surveillance and Reconnaissance Operations (Air ISR).** Before the attack takes place, air reconnaissance should provide intelligence on the enemy and during the attack it should allow the early detection of enemy countermeasures.
 - (2) **Counter Air Operations.** Local air superiority will be essential for large scale offensive operations. All counter air resources should be integrated to achieve this local superiority.
 - (3) **Air Interdiction (AI).** AI will support land forces offensive operation by preventing the adversary from reinforcing and strengthening his defence. AI is defined as air operations conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required (AAP-6).
 - (4) **Close Air Support (CAS).** CAS is an important fire support for ground forces. CAS is defined as air action against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces (AAP-6).
- e. **Helicopters.** Helicopters may support offensive operations with airmobile operations to exploit opportunities by seizing key terrain ahead of attacking forces. They may also be used for:
- (1) Command and control missions.
 - (2) Reconnaissance and surveillance of flanks and gaps.
 - (3) Logistic support including casualty evacuation.
 - (4) Insertion and extraction of Long Range Surveillance Teams.
- f. **Air Defence.** During the preparation stage of an attack, air defence cover will be given to assembly areas, the approach march routes and assets critical to deep operations. During the attack the priority shifts to protecting the attacking force; however, as the attack progresses the protection of reserves and lines of communication may take on increasing importance.
- g. **Engineers.** In offensive operations, engineer support will be required to maintain the momentum of our attacks. Mobility support is therefore paramount. Counter mobility tasks, particularly the protection of flanks and rapid protection against counter-attacks, are also important.
- (1) Engineers will be required to support attacking forces by any or all of the following actions:
 - (a) Breaching or opening own minefields.

- (b) Marking and breaching enemy minefields.
 - (c) Providing means of crossing rivers and other obstacles.
 - (d) Securing the flanks by means of minefields, demolitions and other obstacles. These also help to shape and structure the battlefield and may allow commanders to use economy of force measures for force protection.
 - (e) Preparing and maintaining routes for follow-up echelons.
 - (f) Supporting the consolidation on the objective by digging, laying minefields and creating obstacles.
- (2) The achievement of these functions depends on adequate reconnaissance, timely provision of the necessary equipment and stores, and on the proper grouping and control of engineer elements, particularly minefield-breaching and gap-crossing armoured vehicles.
- h. **EW.** The capability of EW systems is explained more fully in Chapter 3, Section II. In offensive operations, EW provides the commander with a means to acquire information to prepare his estimates and plans, and a weapon to delay the enemy's response to the attack. Friendly EW operations should lead to:
- (1) The detection, location and disruption of enemy surveillance and target acquisition systems, in particular air defence, counter-battery and counter-mortar radars.
 - (2) The detection and location of the reserve and counter-attack elements.
 - (3) Electronic isolation of selected enemy units or formations by disruption of communications with their flank units, higher formations and reserves.
 - (4) Detection and location of enemy electronic countermeasures elements so they may be eliminated by physical attack.

SECTION III ORGANIZATION

409. **General.** Forces in the attack should be organized so that they have clearly defined tasks and do not impede each other in the area of operations. The commander must lay down the responsibilities for reconnaissance, movement forward and security, by establishing areas of responsibility and control measures to the extent necessary. These measures will apply not only to the combat troops but also to the combat support and combat service support elements which follow the attacking force.

410. **Control Measures.**

- a. **General.** The organization for combat should provide for coverage of the area of the attack from well behind the line of departure to the objective and beyond and should include the designation of a number of measures to control the attack. These will depend on how the attack is to be mounted, and on how the commander wishes to control his forces, and include the use of:
 - (1) Assembly areas.
 - (2) Approach routes.
 - (3) Forming Up Places (FUP) (Attack Position).
 - (4) Lines of departure (LD).
 - (5) Boundaries and fire lines.
 - (6) Axis of advance/route.
 - (7) Objectives/intermediate objectives.
 - (8) Airspace control measures.
- b. **Discussion of Control Measures.**
 - (1) **Assembly Areas/Approach Routes.** If time permits, forces which are to be brought together or moved up for an attack use an assembly area, where they should remain only for as long as required, for their administrative preparation or regrouping. These areas should be out of range of most of the enemy artillery and located so that the approach march from them to the line of departure can be effected smoothly, quickly and using concealed routes.
 - (2) **Forming Up Place (Attack Position).** The FUP is the last position held by the assaulting force before crossing the LD. It is an area to which troops deploy immediately before an attack and in which they may adopt their assault formations. It is occupied for as short a time as possible although final orders or briefings may be given or orientation carried out. If it is outside the FEBA it must be reconnoitred and protected before the assaulting force moves in. The area chosen should be easily

recognizable, not under direct fire or observation and not a known or likely enemy artillery target.

- (3) **Line of Departure (LD).** The LD serves to coordinate the movement of the attacking forces at the start of the attack.
- (4) **Boundaries and Fire Lines.** A boundary between adjacent units will always be given in order to facilitate coordination between the units and to establish responsibility for movement, fire, reconnaissance and security. Fire lines and the FSCL coordinate the application of fire to targets on the ground in order to prevent fratricide and to enable effective fire support.
- (5) **Axes and Routes.** Axes and routes are used by a commander to indicate the course of the movement to be followed and the degree of freedom of manoeuvre permitted en route to the objective(s). Axes establish only the general direction of movement; the subordinate commander is permitted to manoeuvre freely between assigned unit boundaries. Designation of a 'Route' establishes the specific direction or course which movement will follow.
- (6) **Intermediate Objectives.** In the attack, intermediate objectives are closely related to the importance of terrain and enemy locations and are also used to coordinate the movement of attacking forces with regard to time and space. Their capture must not cause the attack to lose momentum. Intermediate objectives for a formation are often the main objectives for subordinate forces.
- (7) **Objectives.** Objectives are the physical object of the action taken, for example a definite tactical feature, the seizure and/or holding of which is essential to the commander's plan.
- (8) **Airspace Control Measures.** Exploitation of the airspace over the area of operations must take account of all potential users - air, helicopters, AD, unmanned aerial vehicles (UAVs) and artillery. Requirements for flight routes and areas of restricted/ specialised air operations must be coordinated with the Joint Force Air Component Commander, usually through his Combined Air Operations Centre (CAOC). See ATP-40 for doctrine of Airspace Control.

SECTION IV PLANNING AND PREPARATION411. **Planning.**

- a. **Estimate.** Once a commander has received his mission and analyzed it he will make a full estimate, considering the following factors in particular, and taking account of time/space:
 - (1) **Enemy.** The layout of his defence and his capabilities and likely intentions.
 - (2) **Environmental Factors.**
 - (a) In planning for offensive operations terrain has to be analyzed by considering cover and concealment, observation, fire positions, obstacles, dominating ground and avenues of approach.
 - (b) The place to attack is the location which offers the greatest likelihood of success. Terrain chosen for the Main Effort should allow for rapid movement into the enemy rear although, occasionally, an attack on less suitable terrain may be necessary to achieve surprise. The effect of terrain on the forward movement of combat support over combat service support elements must also be considered.
 - (c) Weather must be considered in terms of its influence on mobility, visibility, air support, troops and equipment and the effects of NBC weapons.
 - (3) **Friendly Forces.** The strength, type, condition and any additional forces required. Implicit in this is a need to examine the force ratios including combat effectiveness to ensure that they are favourable. An examination of friendly forces also includes consideration of the CSS requirements for the operation and the restraints that might be imposed by a lack of such resources.
 - (4) **Security.** The commander must consider how he might best make use of deception and OPSEC in order to achieve surprise and to protect both his plans and troops. In offensive operations it is particularly important to conceal his intentions so that the main force can manoeuvre into a position from which to strike the enemy.
 - (5) **Time.** Offensive operations become harder when the defender has more time to organize and reinforce his defence. The attacker must, however, take sufficient time to concentrate his force in order to generate all available combat power for the attack. Once an attack is under way time remains critical, as it is only likely to succeed if it achieves its objective before the enemy recovers his balance and reacts against it.
- b. **Consideration of Courses of Action .** The most favourable course is chosen or formulated as the decision. From this decision the concept of operations is developed.
- c. **Plan.** The plan may contain or provide for:
 - (1) **Task Organisation.** The organization of forces for the conduct of the offensive operations.

- (2) **Tasks.** The allocation of missions to subordinate commanders.
- (3) **Phasing and Control.** This details the sequence the attack will follow with particular attention to coordination.
- (4) **Timings.** Timings will assist the commander to control the phasing and coordination with flanking formations.
- (5) **Manoeuvre Plan.** The manoeuvre plan will include bypassing.
- (6) **Fire Support.**
- (7) **Electronic Warfare Support.**
- (8) **Reserves.** The possible tasks for reserves will be designated.
- (9) **Reconnaissance.** It is important that the reconnaissance effort should continue throughout the operation so that enemy reaction and movement can be identified and evaluated.
- (10) **Tactical Security and Protection.**
 - (a) Specific measures for camouflage and concealment, deception and electronic counter-countermeasures must be laid down.
 - (b) The line of departure (LD) must be secure.
 - (c) Flank protection should be provided forward of the line of departure.
- (11) **Consolidation.** Plans must detail the action once the objective has been seized. The area must be secured against enemy counter-attack and the force reorganized for the next operation, or phase.
- (12) **Exploitation.** The commander's intentions for exploitation must be stated.
- (13) **Combat Service Support.**
 - (a) Action to be taken before the attack.
 - (b) Provision for continuous support of the operation.
 - (c) Provision for collecting, consolidating and controlling PWs and refugees.
- (14) **NBC Defence.** The commander must specify which NBC dress category is to be worn for an attack, balancing the degradation in performance which will be caused by wearing NBC protection against the disruption which will occur if troops have to take protective action in the course of the assault. If terrain is contaminated it may slow down or even stop an attack. NBC reconnaissance teams should, therefore, be deployed forward to

give warning of any contamination. The reorganization plan must take account of the possible use of NBC weapons against the objective once it has gained, and, when this is possible, must include early deployment of detectors and alarms.

412. **Preparation.** The extent of preparations will depend on the time available, however, the time required for the essential preparations is often a factor to be considered in deciding the time of an attack. Subordinate commanders should be told as soon as possible, normally by a warning order, how much time they have to make their own preparations. Preparations include:

- a. **Preliminary Movement.** Preliminary movement is a controlled move which positions the forces either in or near the assembly areas depending on the timings.
- b. **Preliminary Deployment.** Preliminary deployment involves the elements of the various combat and combat support forces coming together in the task organization for battle. At this stage they also receive logistic replenishment so they are fully combat ready. Any combat service support elements which are to move with the attacking force join up with their designated formation or unit at this stage.
- c. **Infiltration.** Infiltration can be used, under favourable conditions, for reconnaissance, attacks in depth, the capture of specific terrain features or the disruption of communications. Infiltration, however, requires accurate intelligence and is time consuming.
- d. **Preparatory Fire.** If the commander has decided to use fire support prior to H-hour then a plan for preparatory fire will be implemented.

SECTION V CONDUCT**413. Initiation of the Attack.**

- a. **General.** Once the attack is launched, flexibility and speed in the employment of combat power are paramount. The attack is usually conducted as a series of rapid advances and assaults by fire and movement until the final objective is secured. The attack must be executed vigorously, exploiting any favourable developments and reallocating resources to areas where there appears to be an opportunity for success. The commander may have to take action to redeploy or to reinforce, in order to maintain the momentum of the attack, to defeat enemy counter-attacks or to provide security. The momentum must be maintained; the attack must not be delayed in order to align units or to adhere rigidly to a plan. The various components of the conduct of the attack will tend to merge into each other and not all of them will be used in every instance.
- b. **Passage of Lines.** There are occasions when a formation or unit attacks through elements already in contact with the enemy. The troops in contact remain in position until their fire has been masked, or they are no longer required, at which time they may undertake another task. Further details are given in Chapter 7, Section V.
- c. **Approach and Assault Stage.** During the approach march it is important that security is maintained for as long as possible. Forces should make use of all available roads and tracks to achieve maximum speed and dispersion. The various elements or phases of this stage are:
 - (1) **Crossing the Line of Departure.** All timings are based on the time troops cross the line of departure. It will normally be crossed in a deployed formation. In cases where a passage of lines is involved the line of departure may be the forward line of own troops.
 - (2) **Deployment Formation.** The tactical formation adopted by attacking troops when crossing the line of departure will depend on the ground, the distance from the enemy, the expected enemy resistance and the scale of fire support. During the approach it is essential to gain ground by advancing swiftly. Every effort should be made to neutralize the enemy observation capability by using concealed approaches and exploiting supporting fire. The maximum fire support should be provided.

414. Conduct of the Attack.

- a. **Breaking-In.** In order to break-in, the leading forces will concentrate only when they come into contact with the enemy. The major fire support effort should be made at the point selected for the break-in, although account should also be taken of enemy positions in depth and on the flanks. The enemy must not be allowed time to react. Momentum must be maintained. The breach may be extended laterally from the main thrust.
- b. **Fighting Through.** Once the break-in is made, it is vital to maintain the pressure of the attack, not only when assaulting the enemy position to seize initial objectives but also when thrusting to take objectives in depth. Attacking forces must move as rapidly as possible between areas of enemy resistance particularly in a nuclear environment. When enemy resistance is encountered, the leading elements, supported by fire, attempt to overrun and destroy the enemy

as rapidly as possible. Leading troops should lose no opportunity to reinforce and exploit success, thus preventing the enemy from regaining his balance. Reserves should be kept available and positioned so that they may be committed if required. Sometimes determined action by troops fighting through the area of the objective can clear the enemy from a position, so avoiding the use of a much larger force later on when the enemy has been allowed to recover.

- c. **Bypassed Enemy.** Where leading elements bypass resistance in order to maintain momentum and attempt to secure objectives in depth, follow-up forces will take on enemy positions which have been bypassed, if necessary keeping them contained or under surveillance, pending subsequent elimination.
- d. **Security and Protection.** If the momentum of the attack is to be maintained, other elements must be allocated to security tasks, which will include flank protection and the covering of gaps between units. These elements may also be required to provide fire power, to deal with bypassed enemy forces, or to provide protection from ground attack for support units when areas to the rear of attacking echelons have not been cleared.
- c. **Reserves.** Reserves are essential to deal with the unexpected and to maintain the momentum of the attack. A commander may need to increase the size of an assaulting force to allow it to constitute a reserve. In addition, at all times the commander himself must have an effective and uncommitted reserve if he is to maintain a properly balanced force and he must be able to exploit success when the opportunity is presented. Once the original reserve has been committed, another must be constituted - even if this means a change in task organization. Reserves will normally follow the advancing forces engaged in the battle, without becoming engaged prematurely, and must be located so that they can be deployed swiftly in any direction. An airmobile reserve may also be maintained to provide flexibility in the exploitation and pursuit as well as for flank protection.
- d. **Consolidation.** Consolidation is carried out in accordance with the commander's future plans. Once the objective has been seized, the consolidation must begin immediately and be completed in the shortest possible time - to ensure that the force is prepared to meet enemy counter-attacks. The commander must not lose contact with the enemy. He must coordinate a defensive layout against both ground and air action. If the aim is to exploit, minimum forces are used to consolidate so that the momentum of the attack is not lost. The defensive layout should ensure that ground adjacent to the objective is dominated by fire to prevent the enemy from carrying out close reconnaissance. The commander will develop a new fire support plan and, if necessary, form a fresh reserve.
- e. **Exploitation.** Exploitation is characterized by a rapid advance against lessening resistance. The aim is to retain the initiative by preventing the enemy from reorganizing his defence or from conducting an orderly withdrawal. The key to success is speed as any delay will afford the enemy the opportunity to regroup and mount counter-attacks or to establish delaying positions in depth. The psychological effect of an exploitation creates confusion and apprehension throughout the enemy command, reducing his capability to react and lowering his morale; this may in itself be decisive.
- f. **Pursuit.** A pursuit is "an offensive operation designed to catch or cut off a hostile force attempting to escape, with the aim of destroying it". (AAP-6). It may develop from a successful

exploitation, when the enemy force is demoralized and its units are beginning to disintegrate under relentless pressure, or in an operation in which the enemy has lost his ability to operate effectively and attempts to disengage. The primary objective is the destruction of the enemy force, although a terrain objective may also be given. In the conduct of a pursuit, relentless pressure is directed against the retreating enemy while enveloping forces sever his lines of escape.

- g. **Encirclement.** The aim of encirclement is to cut off an enemy force in a particular area, with a view to destroying it there or forcing its surrender. It often results from exploitation or pursuit when the pursuing force overtakes the enemy and blocks his escape.

SECTION VI COMMAND AND CONTROL415. **Command.**

- a. **General.** The commander must be kept informed of the progress of the attack, enemy reactions, and the situation confronting subordinate units. During the attack, he may increasingly decentralize control to subordinate commanders to permit them to react more rapidly to changes in the situation. Through knowledge of his commander's concept and the changing situation, the subordinate commander implements the plan and modifies it as necessary.
- b. **Orders.** Warning orders should be issued to ensure maximum use of the time available for preparation. Written operation orders may cover in detail only the initial phase of a deliberate attack. For subsequent stages, a commander may be able to provide only broad instructions. In doing so, he will make his concept of operations clear but leave the execution to subordinate commanders. As the situation develops, he will supplement and amend his original order with fragmentary orders. The success of the operation will depend increasingly on the initiative of subordinate commanders, especially in the exploitation and pursuit.
- c. **Location of Commander.** A commander will decide for himself where he is best located at any time. Often the range and reliability of communications enable him to see the whole picture at his principle headquarters where he has the support of his full staff and his specialist arms and services advisers. At some crucial moments, however, unless he gets forward to the critical point he will never see the full, immediate situation, in order to spot the opportunity that will allow him to exploit the situation faster than the enemy commander. Neither will he be able to impose his will at the critical time.

416. **Control.**

- a. **Positioning of Headquarters.** The moves of headquarters must be arranged to meet the requirements of the commander and planned in advance so that early reconnaissance can be made and communications sites selected as far as practical. Normally, a formation headquarters will establish itself forward immediately before the attack. This makes communications easier when the attack starts and ensures that the commander and his staff are near the assembly area at the critical period. As the attack progresses, the command elements also move forward to enable the commander to exercise control.
- b. **Control Measures.** These are covered in paragraph 410.

417. **Communications.** Communications security is of the greatest importance prior to the attack. The implications of any restrictions on the use should be considered in advance. Radio communications will be essential for effective command and control during the attack. Provision for alternative communications should be made in case communications should not be available or lost for any reason.

SECTION VII COMBAT SERVICE SUPPORT

418. **General.** Continuity of CSS is vital to the success of offensive operations. The commander and his staff must, therefore, give careful consideration to the availability of supplies, and the capability of the CSS support elements to deliver the supplies and to provide other necessary support to units.

419. **Specific Considerations.** While all aspects of CSS must be considered in planning an operation, the availability of ammunition, fuel and maintenance support must be given the most emphasis:

- a. **Forward Positioning.** To offset the strain on the transportation system, the commander must consider prepositioning supplies and support facilities well forward. Where possible, these should be kept mobile so that they can be deployed forward as the attack progresses.
- b. **Ammunition/Fuel Supply.** Adequate planning is necessary to ensure an uninterrupted flow of ammunition/fuel to the front, because of the large volume that must be moved and the often limited transportation resources available.
- c. **Maintenance.** To maintain effectively the force, repairs must be carried out as far forward as tactically feasible. This reduces the demands on the evacuation facilities and returns combat equipment to the battle in the shortest possible time. The forward positioning of major assemblies will greatly assist in the battlefield repair of combat vehicles which, in the main, will consist of the replacement of complete assemblies rather than repair. There will need to be a regeneration loop capable of restocking the system with assemblies.
- d. **Medical Support.** When planning the medical support for an offensive operation, the following important factors must be considered:
 - (1) Medical units must be employed as far forward as the tactical situation allows.
 - (2) Plans must be flexible, since medical units are normally not held in reserve.
- e. **Traffic Control.** Control on routes will be important to ensure the approach march, replenishment of committed forces, evacuation of casualties and deployment of reserves is not impeded.

CHAPTER 5**DEFENSIVE OPERATIONS****SECTION 1 FUNDAMENTALS**

501. **Purpose.** Usually, defensive operations are undertaken when the enemy has the initiative, to prevent him from seizing terrain or breaking through into a defended area. They aim to break the enemy attack, destroy his forces and stop him from accomplishing his aim. In so doing they create the circumstances for offensive action. This is fundamental to the defensive battle which must not drift into a situation where the defending force merely reacts to enemy moves. Every opportunity should be taken to grasp the initiative and force the attacker to react to the defensive plan.

502. **Objectives.** The objectives may be:

- a. To wear down the enemy's offensive capability and to cause his attack to fail.
- b. To retain a previously determined area and prevent the enemy from breaking through.
- c. To gain time.
- d. To allow the concentration of friendly forces elsewhere.
- e. To force the enemy to concentrate so that he is more vulnerable to friendly fire.

503. **Principles and Factors.** The following principles and predominant factors are of particular importance for defensive operations:

- a. Selection of terrain (including use of natural and man-made obstacles).
- b. Intelligence.
- c. Depth.
- d. Mutual support.
- e. Concentration of combat power.
- f. Manoeuvre.
- g. Firepower.
- h. Electronic warfare.
- i. Cohesion.

- j. Offensive action.
- k. Reserves.
- l. Deception.

504. **Selection of Terrain.** The strength of the defence depends to a great extent on the selection and use of the terrain. Once the terrain has been chosen, every effort must be made to use it to the best advantage. This can only be achieved if it is known in detail by every commander down to the lowest level.

- a. Terrain should be selected which allows the best use to be made of fire, concealment, protection and movement by the defender, but which restricts the ability of the enemy to observe and deploy his forces. Preferably, the area should offer opportunities to use man-made barriers and obstacles which can be used to enhance the ground's natural barriers or to cover areas which lack such natural features. Terrain may be considered as being of two general types:
 - (1) Predominantly open, flat terrain which can relatively easily be covered with surveillance and dominated by fire. Such terrain requires the construction of extensive barriers if the movement of enemy forces is to be restricted. These areas can best be defended by forces strong in armour, supported by long range anti-tank weapons.
 - (2) Forested, built-up or broken terrain which presents greater difficulty to the attacker's ground mobility. It slows his movement and provides good concealment and protection for the defender. Usually the defender can find natural obstacles which can be enhanced to impede the enemy and canalize his movement. If the enemy intends to seize this type of terrain he will require strong, dismounted forces. These areas can best be defended by forces strong in infantry.
- b. In making his estimate of the situation, the commander will take account of key terrain, the seizure/retention of which will offer a marked advantage to either the attacker/defender. In the development of his estimate, he will designate as vital ground any key terrain that is of such tactical significance that its loss will make the defence untenable. Such ground must be regained if lost.

505. **Intelligence.** Accurate intelligence is essential to success. The plan for the defence will be based on the best intelligence available, using all commanders sources and agencies and intelligence from higher and flanking formations. This will include assessments on enemy capabilities and his intentions with the main tasks of determining the enemy's probable main effort, the likely enemy approaches, the attack posture of the enemy's lead elements and the movement of forces in depth to the limit of the commanders area of interest. However it is unlikely that a complete knowledge of the enemy's intentions can ever be deduced before his attack begins. It is, therefore, essential that the commander maintains his efforts through surveillance (including EW) and to continue to acquire information and intelligence as the battle develops, so that he can control the defence and employ his resources at the right place and time.

506. **Depth.**

- a. Depth in defence is necessary to achieve freedom of action, to give time for reaction and to absorb the enemys momentum.
- b. Depth in the defence is obtained by the allocation of sufficient space for:
 - (1) Employment of protective elements.
 - (2) Employment of long range weapons and EW resources, to destroy, defeat, disrupt or delay enemy elements throughout the depth of the commanders area of influence. Targets will be selected on the basis of their importance to the continuity, momentum, sustainability, and command and control of the enemy attack.
 - (3) The use of battle positions, obstacles and defensive fire throughout the area.
 - (4) Positioning and movement of reserves, fire support elements, and combat service support facilities.

507. **Mutual Support.** Mutual support increases the strength of any defensive layout. Boundaries, areas and positions should be selected with this principle in mind. It is achieved when the gaps between defended positions and open flanks are covered by fire in such a way that the enemy cannot mount an attack upon one position without being subjected to fire from at least one other. It should always be achieved at company level, but for battalions and above a lesser degree of mutual support may have to be accepted. Other considerations are:

- a. To neutralize mutually supporting positions, an attacker must disperse his covering fire away from his primary objective, thus reducing that available for his main effort.
- b. The degree of mutual support obtained depends upon the terrain, range of weapons and visibility. Ideally, the frontage that units are called upon to defend should be directly related to their ability to provide mutual support. The commander must balance the need for mutual support with the, sometimes conflicting requirements of depth and mobility, particularly at times of nuclear threat.

508. **Concentration of Combat Power.** The commander must have the freedom of action and the flexibility to concentrate the combat power required and must decide when and where to concentrate his forces to oppose the attacking enemy. This decision will depend upon the intelligence concerning the enemy's intentions and strength. It must be taken in good time. A commander may concentrate combat power by manoeuvre and/or by massed fire.

509. **Manoeuvre.** Manoeuvre is the decisive element at all levels in the defence. By combining movement with fire, the defending forces make the best use of the terrain assigned to them, in order to inflict high losses on the enemy and at the same time avoid destruction by enemy fire. By manoeuvre, the commander concentrates combat power, permitting him to create a favourable force ratio in order to defeat the enemy.

510. **Firepower.** The effectiveness of defence is based primarily on the carefully planned fire of all weapons. The fire of combat troops and artillery, the support of armed or attack helicopters and tactical air forces must be complementary, carefully coordinated and brought to bear with the maximum effect at the right time and place.

511. **Cohesion.** The defence must be planned as a cohesive whole and coordinated with great care throughout the operation. The failure of the defence frequently coincides with the loss of cohesion. The enemy aim is generally to achieve a swift breakthrough of the defended area. Often he will seek to attack along the defender's lateral boundaries; cohesion of defence along such boundaries, particularly where they are shared by different nations, is therefore essential. Tasking of reserves should include missions to maintain or restore cohesion along boundaries. Commanders must ensure that maximum coordination is achieved and maintained by:

- a. A complete understanding of the superior commander's concept of operations.
- b. An understanding of the tactical doctrine to be applied by flanking formations.
- c. Care in the selection of boundary locations so that these do not increase the coordination problem.
- d. Selection of coordinating points astride the boundary.
- e. Exchange of information.
- f. Exchange of liaison teams.
- g. Planning for mutual support.

512. **Offensive Action.** Although in the defence, the overall initiative is generally with the attacking force, the defender must not remain passive and wait to react. Commanders at every level must seize or create opportunities to surprise the enemy thus forcing him to depart from his plans. Enemy forces should be attacked and destroyed or disorganized and delayed not only at the point of immediate contact but wherever they can be engaged throughout the depth of the area of operations. The defence should be fought with the imagination, energy and aggression necessary to wrest the initiative from the attacker wherever and whenever possible.

513. **Reserves.**

- a. **Role.** Reserves are essential if a commander is to have freedom of action in dealing with both anticipated and unexpected developments in the battle. They provide both flexibility and balance to the defence.
- b. **Tasks and Employment.** The main functions of reserves are to reinforce, block, counter-attack, replace other units and protect flanks and rear areas. The correct allocation of resources between forward and reserve forces and the decision as to when to commit reserves are among the most difficult and important the defending commander must make.

- c. **Reconstitution.** Once the reserve has been committed, a new one must be created or obtained.

514. **Deception.** Deception seeks to manipulate the enemy's perception of the situation. It is mainly used in defence to give a false impression of:

- a. The exact location of the main defensive positions and friendly forces, thereby inducing the enemy to waste his main effort and resources in the wrong place.
- b. The direction and timing of friendly force counter-attacks, thereby inducing the enemy to deploy his reserves away from positions where they could influence the battle.

515. **The Operational Framework.** It is the simultaneous application of combat power throughout the depth of the area of influence that is likely to defeat the enemy by breaking up his momentum and providing the conditions for offensive action against him. In order to achieve this, commanders must attempt to synchronize their deep, close and rear operations when executing their defensive plan. Despite the fact that these may not be contiguous to one another, commanders should still dominate their entire area of influence by ensuring that combat power is available to attack the enemy wherever he ventures, denying him freedom of action.

- a. **Deep Operation.** Deep operations are designed to achieve depth and simultaneity in the defence and to secure advantages for future operations. They prevent the enemy from concentrating overwhelming combat power by disrupting his momentum and destroying the coherence of his attack. This is accomplished by affecting his movement in depth, destroying assets vital to his plan and interrupting or denying him the use of important operating systems such as command, logistics or air defence, at critical times. By focusing on such targets, deep operations are able to directly protect close operations. As the defender denies freedom of manoeuvre to the attacker he also seeks to set the terms for his own transition to the offence.
- b. **Close Operations.** Close operations are the activities of the main and supporting forces in the defensive area to slow, canalize and defeat the enemy's main force. This can be accomplished in a number of ways which include defending from strong static positions and the use of more mobile forces acting offensively.
- c. **Rear Operations.** Rear operations protect the force and sustain combat operations. If conducted successfully, they allow the commander freedom of action by preventing disruption of C2, fire support, logistic support and movement of reserves.

516. **Forms of Defensive Operations.**

- a. Whilst defensive operations may take a wide variety of forms, they can essentially be divided into two broad categories:
 - (1) **Mobile Defence.** Mobile defence focuses on the destruction of the attacking force by permitting it to advance to a position which exposes it to counter-attack and envelopment by a mobile reserve. The emphasis is on defeating the enemy rather than retaining or retaking ground. Mobile defences employ a combination of offensive, defensive and delaying action necessitating the forward deployment of relatively small forces and the

use of manoeuvre supported by fire and obstacles to wrest the initiative from the attacker after he has entered the defended area. At divisional level the defended area could be up to 100 kms in depth. Consequently the defending force must have mobility equal to or greater than the enemy's and the ability to form a large reserve which will conduct the decisive counter-attack.

- (2) **Area Defence.** Area defence focuses on the retention of terrain by absorbing the enemy into an interlocked series of positions from which he can largely be destroyed by fire. The emphasis here is on retention of terrain or its denial to the enemy. Since, unlike mobile defence, area defence will not necessarily produce outright destruction of the enemy, it presumes some other simultaneous or subsequent operation to achieve decisive defeat of the enemy. In an area defence, the bulk of the defending force are deployed to retain ground, using a combination of defensive positions and small mobile reserves. Commanders organize the defence around the static framework provided by the defensive positions, seeking to destroy enemy forces by interlocking fire or by local counter-attack of enemy units penetrating between defensive positions. Unlike mobile defence, for which considerable depth is essential, area defence may be conducted in varying depth depending on the mission, forces available and the nature of the terrain.
- b. Although these descriptions convey the general pattern of each type of defence, both forms employ static and dynamic elements. Defending commanders may well wish to combine both patterns, using static elements to delay, canalize, cause attrition to, and ultimately halt the attacker, and dynamic elements, such as spoiling or counter-attacks, to strike and destroy his committed forces. The balance among these elements will depend on the unit's mission, composition, mobility, and relative combat power, and on the character of the battlefield.
- c. The fundamental difference between mobile and area defence is:
 - (1) Mobile defence seeks to defeat the enemy's attack by destruction.
 - (2) Area defence seeks to defeat the enemy's attack by denial.

SECTION II FORCES AND TASKS

517. **Employment of Combat Forces.** To decide the best way to use his resources. The commander should consider the following:

- a. **General.** The concept of the defence to be adopted will be influenced to a great extent by the type of combat forces, armoured or non-armoured, available. The number and type of forces to be used may in themselves be further dictated by the enemy, the terrain and the weather. Time may also be a major factor as non-armoured forces usually require more time than armoured forces to prepare defensive positions and, unless they are airmobile, more time to move between them.
- b. **Armoured Forces.** Where the majority of the forces available are armoured, the defence can be conducted with greater flexibility and full use can be made of mobility. Operations will include defence from selected positions, delaying actions and counter-attacks, all of which can be conducted in defensive sectors of greater depth and width than in a defence with non-armoured forces. Armoured combat troops have a high degree of protection from enemy fire, and consequently are capable of going into action rapidly and effectively even in an NBC environment. This makes them highly suitable for use as reserves. Armoured forces use defilade positions to strike the enemy in the flank, forcing him to canalize so that he may be destroyed by the full weight of the firepower of the defence. In addition, armoured troops can manoeuvre to delay the advance of strong enemy forces and then immediately change over from a mobile to a more static form of action or to conduct offensive action. Due to their importance in defence, armoured combat forces will always be a primary target for enemy air attacks. Skilful use of cover, concealment, dispersion and local air support can considerably reduce the effect of this threat and, wherever possible, air defence forces should be assigned to cover operations by armoured units.
- c. **Non-armoured Forces.** Non-armoured forces are capable of staging an effective defence only from prepared positions, and will, therefore, be employed primarily in a more static role. Their defence positions should make the best use of barriers and be located where the terrain offers scope to employ the fire power and the full range of their anti-armour weapons; they are, therefore, particularly suitable for use in close country. The positions selected should be covered from observed fire for as long as possible, thus enabling them to retain their effectiveness. In most cases, they must be well supported by armoured and combat support resources.
- d. **Armed Helicopters.** Air manoeuvre in defensive operations is very similar in character to air manoeuvre in offensive operations. Helicopters have, however, an important role in defensive operations by causing early attrition of the enemy in the deep battle and by disrupting, delaying and shaping the enemy for the close battle. Helicopters can be effectively employed where a commander does not wish to irrevocably commit ground forces; forward of a reserved demolition or obstacle for example. They can be effective in closing gaps in a defence plan possibly in conjunction with a preplanned JAAT operation prior to relief by ground forces. Helicopters are also able to counter enemy activity in the rear area and, in particular, airborne or airmobile forces. Some helicopters may be equipped for air to air combat. Provided weather and visibility conditions allow, their mobility, firepower and independence from the ground will make them a useful means for:

- (1) Operations against enemy penetration.
- (2) Containment of enemy attacks.
- (3) Support of counter attacks.
- (4) Support of airmobile operations.

518. **Employment of Combat Support Forces.**

a. **Artillery.**

- (1) The artillery commander prepares and executes the fire plan in accordance with the mission and with his commander's concept of operations, coordinating artillery fire with the operations of combat troops, helicopters, air support and with the barrier plan.
- (2) In view of its long ranges and the high flexibility of its fire, artillery is a powerful weapon to assist in neutralizing an enemy attack. In order to be fully effective, however, it must have the ability to acquire targets in-depth.
- (3) In defence, the tasks of artillery are:
 - (a) During all phases of the defence give fire support to troops in contact.
 - (b) Attack enemy forces in depth before they can be committed to the main battle.
 - (c) To coordinate fire support to maximise combat power.
 - (d) More specific tasks include:
 - i. Support of the covering force.
 - ii. Disruption of enemy preparations for attack.
 - iii. Separation of attacking enemy tanks from dismounted infantry.
 - iv. Attacking enemy artillery and forward air defence elements.
 - v. Covering barriers, gaps and open areas.
 - vi. Neutralizing or isolating enemy forces that have penetrated the defensive area and impeding the movement of enemy reserves.
 - vii. Supporting counter-attacking forces.
 - viii. Assisting in battlefield surveillance and target acquisition.

- ix. As a last resort, defending own gun positions by direct fire.
 - x. The use of scatterable mines to block enemy approach routes.
- b. **Air.**
- (1) **Air ISTAR Operations.** Air reconnaissance is extremely important in all phases of the defence, particularly during the early stages, to help determine the strength and direction of the enemy advance.
 - (2) **Counter Air Operations.** Counter-air operations are conducted to destroy, disrupt or limit enemy air power as close to its source as possible and assist in reducing the air threat against friendly land forces. Ground forces may aid these operations by suppressing enemy forward air defences.
 - (3) **Anti-Surface Force Air Operations (ASFAO).** It is more economical and effective to locate and attack enemy forces whilst they are concentrated in depth preparing for an attack using AI, or advancing along lines of communication, than when they are deployed in the battle area. CAS, if properly planned however, does also allow the commander to concentrate fire rapidly on targets although, in defence, the timing and extent the required support cannot be determined in advance with any degree of certainty.
- c. **Support Helicopters (SH).** In defence recce, utility and transport helicopters can support ground force operations through their employment in:
- (1) Airmobile operations.
 - (2) Command and control missions.
 - (3) Reconnaissance and aerial observation missions.
 - (4) Logistic support including casualty evacuation.
- d. **Air Defence.**
- (1) Priorities for the allocation of air defence artillery resources will be based on the commander's estimate of the situation. Air defence artillery will be required to protect important areas and points. It is normally used to cover the following:
 - (a) Troops in forward areas.
 - (b) Command and control facilities.
 - (c) Supply facilities.
 - (d) Critical assets and points.
 - (e) Airfields.

- (f) Reserves.
- (g) Demolitions.
- (2) Normally counter-attacking forces will have priority.
- (3) The assigned high to medium altitude air defence missile engagement zone will be coordinated with the air component commander.
- e. **Engineers.** There will seldom, if ever, be sufficient engineer resources to meet all the requirements of a defence plan. The commander must therefore establish priorities, in accordance with the determination of his main effort, between the various engineer tasks which are:
 - (1) **Counter mobility Tasks.** Countermobility tasks serve to disrupt, turn, fix or block enemy forces. They will be carried out in conjunction with combat forces and coordinated with direct and indirect fire weapons, to deny the enemy the mobility he requires, and to cause casualties to his attacking forces. Countermobility tasks include:
 - (a) **Barriers.** The maximum effect is obtained from barriers when as many minefields and other obstacles as possible are employed in combination, and when they are kept under surveillance and covered by fire. Barriers are likely to include the use of natural and man-made obstacles; they must be coordinated with host nation advisors when appropriate and comply with Host Nation Agreements. The barrier plan is part of the overall defence plan which will require continuous adjustment as barriers are improved and supplemented as time permits and the battle proceeds. Barrier restricted areas may be declared in order to retain the required freedom of movement. The restriction may involve time, location or type of obstacle.
 - (b) **Demolitions.** The system for the control of demolitions as agreed by NATO is contained in Ch 11, Sect IV and STANAG 2017. The number of reserved demolitions must be kept to a minimum, as they tie down large numbers of combat troops as demolition guards and engineers in firing parties.
 - (2) **Survivability Tasks.** The avoidance of detection and destruction will require frequent movement and rapid terrain preparation (includes digging and use of cover, concealment and camouflage to enhance survivability). Survivability can be enhanced by the use of concealment, deception, dispersion and fortification. Engineer protection or survivability tasks will include assistance to other arms in:
 - (a) **Field Fortifications.** Engineer work in this area includes the use of equipment to assist in the preparation and construction of such fortifications as trenches, command post shelters, artillery fire positions and anti-tank weapon and armoured combat vehicle positions. Additionally, fields of fire can be cleared for all weapon systems. Strongpoints are heavily fortified positions which cannot be overrun quickly or bypassed easily by enemy forces.

- (b) **Protection of Combat Supplies.** Combat supplies should be protected in particular against blast, shrapnel, incendiaries and NBC contamination. By giving advice to the logistic management on the selection of the most suitable storage sites, the requirements for engineer support can be considerably reduced.
- (c) **Camouflage, Concealment and Deception.** Major positions, facilities and operational sites may require special camouflage stores and measures which could be undertaken by engineers. Deception measures often include the use of camouflage and special engineer deception measures can include construction of dummy positions and decoys which must be carefully planned and coordinated within the framework of the tactical plan and real positions.
- (3) **Mobility Tasks.** During preparations for defensive operations, engineers will reconnoitre, improve and open routes for use during battle. During the main defensive battle itself, mobility tasks include:
 - (a) **Routes.** The maintenance and improvement of routes will be a major engineer task as the defensive position is subjected to fire from enemy artillery and air. This may necessitate the deployment of assault bridging, trackway and engineer heavy equipment well forward.
 - (b) **Minefield Gaps and Lanes.** Careful coordination will be necessary to ensure that the required lanes or gaps are left in minefields for the redeployment of troops.
 - (c) **Support to Countermoves.** Close support engineers will be required in support of offensive operations to overcome obstacles produced by the enemy.
 - (d) **Counter Attacks.** Gaps must have been left in major obstacles for the passage of counter-attack forces.
- f. **EW.** EW has the following functions in support of defensive operations:
 - (1) Its primary function will be to continue gathering information on the enemy and to update information data bases. EW resources will thus concentrate on the provision of vital information on the enemy's:
 - (a) Intentions.
 - (b) Grouping, location and axes of advance of:
 - i. Leading elements.
 - ii. Main body.
 - iii. Supporting artillery and engineer units.

- iv. Forces in depth.
- (c) NBC delivery and air defence systems.
- (2) As the enemy closes to the main defence position, jamming resources will be concentrated on the neutralization of enemy fire control, target acquisition and intelligence gathering systems, while information gathering resources continue to provide intelligence and steerage for own jammers.
- (3) EW resources will also attempt to locate enemy jamming assets so they may be eliminated by physical destruction.

SECTION III ORGANIZATION OF A DEFENSIVE AREA OF OPERATIONS519. **General.**

- a. The commander's defensive area of operations is as illustrated purely diagrammatically at Corps level in Figure 5-1, normally includes:
 - (1) A covering force.
 - (2) A defence area, which may include a rear area.
- b. The covering force area and the defence area are separated by the forward edge of the battle area (FEBA). However, the responsibility for the conduct of operations will often change forward of the FEBA, at the handover line.

520. **Covering Force Area.**

- a. The covering force area is the area extending forward from the FEBA as far as forces are deployed to observe, engage, intercept, delay, disorganize and deceive the enemy during his advance to the FEBA. The tasks of covering forces can be summarized as:
 - (1) Gaining information on the location, direction and weight of the enemy attack.
 - (2) Gaining time.
 - (3) Providing security.
 - (4) Attrition - inflicting maximum casualties on the enemy.
- b. According to the circumstances and the terrain available, the enemy will be engaged by forces conducting delaying operations beyond the FEBA. The decision as to whether to conduct such delaying operations rests with the commander responsible for the defence of the overall area. If he decides to order a delaying operation, he will allocate the area to be used by the covering force.
- c. Wherever possible, the forces used to fight the delaying operation should not be immediately required in the defence area. They should be self-contained and, if possible, armoured. The commander of the covering forces and those in the defence area will coordinate their actions. He must ensure that the delaying operation is closely coordinated with flanking formations. Details for the rearward passage of lines and change of responsibility for the conduct of operations in the covering force area are covered in Chapter 7, Section V, Relief of Troops in Combat.
- d. Patrols or small protective elements will generally be placed forward to provide security for the forces in the defence area. This must be carefully coordinated across boundaries.

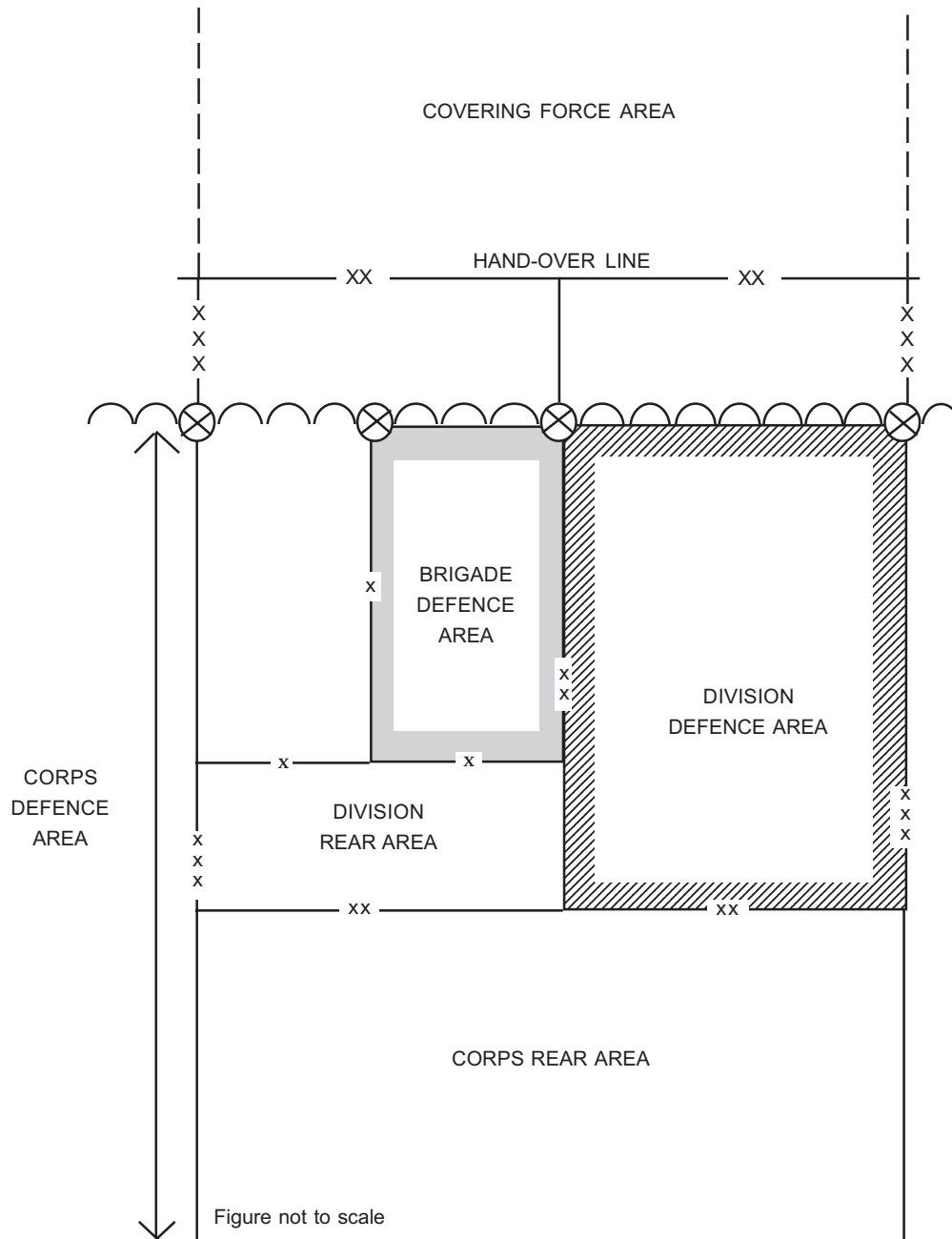


Figure 5-1: Corps Defence Area of Operations (with the Covering Force under Corps Control)

Note:

This diagram illustrates a Corps Defence Area of Operations in very basic outline. It should be remembered that on the non-linear battlefield the lines will not always be straight and there may be large gaps between one Corps or division area and another.

521. **Defence Area.**

- a. The defence area extends rearwards from the FEBA; it is that area in which it is planned to fight the decisive defensive battle. The battle is considered in more detail later in this chapter.
- b. The rear areas extend from the rear boundaries of formation/unit areas to their subordinate formation's/unit's rear boundaries. It is here that the reserve forces of the formation/unit are normally located. In addition, some long-range fire support units, organic and attached combat support and combat service support units will often be found in this area. In the allocation of deployment areas, consideration must be given to the areas needed for the overall concept of defence as well as areas required for combat service support troops and installations.

SECTION IV PLANNING AND PREPARATION

522. **General.** The need for careful and comprehensive preparation of the defence requires the most efficient use of the time available. Concurrent planning and action at every level of command is essential. Warning orders and planning guidance are essential.

523. **Planning.**

- a. A commander should provide his 'Intelligence Requirement' to his subordinates as early as possible in order to enable them to complete their plans. This will include:
 - (1) Information on enemy and friendly forces, including nuclear and chemical capabilities and intentions.
 - (2) Task organization.
 - (3) The unit's or formation's mission; the concept of operation and the tasks stemming from it.
 - (4) The boundaries, including the division of the area of responsibility into the covering force, defence and, if applicable, rear areas, and the delineation of the FEBA.
 - (5) Additional tasks such as the provision of troops for the covering force, work parties, the security of specific points and rear area security.
 - (6) The barrier and survivability plan, in outline.
 - (7) The critical timings.
 - (8) Other measures needed to coordinate the defence plan, including areas allocated for reserves, combat support and combat service support troops.
 - (9) Blocking positions in depth.
- b. **The Mission.** The mission will be given by the next higher commander. Limitations imposed on the mission may dictate the defence plan to be adopted. This may be the case if action by adjacent units could lead to the risk of unacceptable gaps with a consequent loss of cohesion in the overall defence.
- c. In planning the defence, the following factors require special consideration in the commanders estimate of the situation:
 - (1) **The Threat.** Examination of the threat will include consideration of the enemy's tactical doctrine and details of his capabilities, including nuclear and chemical delivery means and munitions, in order to determine his possible courses of action.
 - (2) **Dispositions.** The positions assigned to combat troops, combat support troops and reserves are primarily determined by their mission. This may require some elements to

be located in an area that has been assigned to another unit. This disposition in no way changes responsibility for the conduct of operations in that area. Fire support units and CSS units should be sited away from the most probable main axes of the enemy advance.

(3) **Terrain and Weather.**

(a) **Terrain.** See paragraph 504.

(b) **Weather.** The concept of operations must make allowance for any changes of weather conditions that may affect the conduct of the defence.

(4) **Frontages Assigned.** If troops are assigned wide frontages they must not allow their combat power to be dissipated in covering the whole width and should place greater reliance on mobile reserves, depth, firepower and surveillance.

(5) **Resources.** During his planning a commander should identify and request any additional resources needed to accomplish his mission.

(6) **Time.** The time required for deployment to, and preparation of, the defensive positions.

(7) **Denial Measures.** In accordance with the denial plan, denial measures have to be prepared for execution, if required, in close cooperation with the appropriate host nation authorities.

(8) **Coordination.** Coordination of the various plans must be carried out not only within the area of responsibility, but also with flanking formations. Higher headquarters must be kept fully informed.

(9) **Population.** The population may become the most critical, single environmental factor, be it permissive or restrictive, in combat operations.

(10) **NBC Defence.** Depending upon his estimate of the actual threat, the commander has to consider the need to implement NBC protective measures. If the enemy unexpectedly stops his attack or withdraws troops deployed forward, it may be indicative of his imminent use of nuclear weapons. Troops, including flank units threatened by the strike, should be warned and the commander will have to decide whether his force should continue to hold, disperse, or seek to interlock with the enemy. The Commander of a defensive position subjected to chemical attack has two basic options: to move or remain in place. Before deciding to move he must consider:

(a) How long the hazard is likely to persist on the present position.

(b) The effect of any move on operational plans.

(c) The need to decontaminate before occupying a new position.

(d) The spread of contamination caused by moving.

- (e) Any loss of protection, including NBC collective protection.

524. **Preparation.** In defensive operations, the time available for preparation is of extreme importance. Priorities must, therefore, be set out clearly and work must be started as early as possible. If it is essential, the time available for the preparation of the defence may have to be increased by adjusting the mission of the covering force. An essential and most time consuming activity is engineering work. It is important, therefore, that the maximum effort and priority is given to countermobility and survivability tasks. The execution of specific denial measures will begin during the preparation phase of the battle, continue through the covering force action (paragraph 527) and be completed during the main defensive battle (paragraph 528).

SECTION V CONDUCT OF THE DEFENCE

525. **General.** A commander must adapt his use of the force available to the terrain and deploy it in such a way as to defeat the enemy. Every form of defence will require ground to be held. Similarly, commanders will employ mobility depending upon the situation. The balance between holding ground and using mobility will depend upon the mission, the nature of the enemy, the terrain and the forces available.

526. **Concept of Operations.**

- a. Within the commander's concept of operations, the battle is normally fought as follows:
 - (1) Covering force action.
 - (2) Decisive defensive battle, including reinforcement, blocking enemy penetration and counter-attacking.
- b. During both of these stages of the battle, enemy forces in depth will be attacked to prevent or delay their deployment.

527. **Covering Force Action.** Although the task of covering force action is very demanding, casualties and delay can be inflicted on the enemy out of all proportion to the covering force, if it is handled skilfully and makes use of favourable ground, thus deceiving the enemy as to the location of the defence area and possibly leading him to give away his intentions. A full description of the tasks and responsibilities of a covering force are contained in Chapter 6, Delaying Operations, however, two of the major points are covered below in outline:

- a. **Commencing the Action.** Before the covering force itself establishes contact on the ground, every opportunity should be taken to harass the enemy by air attack. Artillery will be deployed in the covering force area in order to be able to engage the enemy at the earliest possible moment.
- b. **Breaking Contact.** As the covering force approaches the FEBA, it may become necessary to increase the intensity of the fire support from the defence area to allow the covering force to break contact. The withdrawal of the covering force through the forward positions in the defence area must be carefully planned and coordinated. In most cases it necessitates the breaking of contact before the handover line forward of the FEBA. This is in order to avoid confusion or disruption of the defence at the FEBA at a critical time.

528. **Main Defensive Battle.**

- a. The defensive battle begins as the enemy approaches the FEBA. As a general rule, units fight in such a way as to block the enemy attack as far forward as possible. Nevertheless, the action will be extended in-depth in order to counter enemy penetrations which cannot be stopped further forward. Gaps in barriers that have been left for the withdrawal of the covering force must be guarded and arrangements made for closing them.

- b. After the enemy has reached the defence area, he will try to find weak points and attempt to force a passage through, possibly by a series of probing attacks. If one of these is successful, the defender must block the penetration immediately and destroy this enemy force as soon as possible.
- c. The enemy is likely to launch his main attack as soon as he has adequate intelligence. He will concentrate his strength on selected areas and support these attacks with heavy artillery fire and intensive air attacks. The attacks may be supported by other subsidiary assaults, such as airborne or airmobile actions between, or to the rear of, forces conducting the defensive battle.
- d. As the enemy attack begins to develop, the defending forward units, if not already deployed, will move into their defensive positions and engage the enemy. The timing of this deployment is of major importance, particularly in the face of heavy artillery fire and air attack. As the battle progresses, the enemy advance may be slowed due to canalizing and bunching, thus presenting good targets for defensive fire including air support. The maximum weight of defensive fire must be brought to bear at this stage of the battle.
- e. **Defence against Armour.** As the main enemy threat is normally from armour, planning for anti-armour defence will be the first consideration when laying out a defensive posture; this is so important that a commander will coordinate it himself. The early destruction of enemy tanks is the key to success in defence. All anti-armour weapons must be coordinated to destroy enemy armour by day and night. The following points should be applied when siting anti-armour defences:
 - (1) Anti-armour defences must be concentrated on likely approaches, although no area should be disregarded.
 - (2) Early detection of enemy units is essential. This allows for the timely employment of anti-tank weapons to destroy enemy armour.
 - (3) Effective siting of barriers assists in the destruction of enemy armour by hindering movement and canalizing it into the coordinated fire of anti-tank weapons, mines, tanks, artillery, armed helicopters and air support resources.
 - (4) One of the primary considerations in the selection of positions and for the deployment of a combined arms team is the capability to separate the accompanying enemy infantry from the tanks as early as possible.
 - (5) Armoured forces will be given the primary task of blocking or counter-attacking enemy penetrations.
 - (6) If the enemy armour succeeds in penetrating the forward defence, anti-tank weapons located in-depth will attempt to stop further advances. Forces in forward areas may remain in position to continue to destroy the following enemy armour.
 - (7) Armed or attack helicopters are often the most quickly deployed means of countering tank attacks. Conditions of bad visibility may, however, hamper their employment.

529. **Reinforcement, Blocking and Counter-Attack.**

- a. **General.** The decision on how and when a reserve is to be committed is one of the most important a commander must make. Though it may be possible to have reserves at a lower level, commanders at brigade level and above must designate forces for reinforcement, blocking and counter-attack. There will seldom be reserves for all tasks and so any troops not actually in combat must be considered as a possible source of reserves.
- b. **Reinforcement.** By reinforcement, elements which are engaged in combat are provided with additional combat power. This can come either from the designated reserve unit or formation or from any uncommitted forces.
- c. **Blocking.** Blocking is the deployment of forces to stop elements of the attacking force which have broken through the forward positions. The timing of the deployment of a blocking force will depend on the way that the enemy action develops, with particular regard to his strength, speed and direction of advance. This must be analyzed and related to the location and size of the blocking forces available, their reaction time and the time available for them to prepare blocking positions. Often it is only by blocking that time can be gained and the enemy halted in preparation for a subsequent counter-attack
- d. **Counter-Attack.** The counter-attack uses part or all of a defending force to exploit opportunities to strike the enemy at a decisive time and place and to defeat him. The opportunity to launch a counter-attack will be fleeting and therefore a commander and his forces must be mentally and physically prepared for the task. Its planning is a basic and essential part of defence and it must be developed with other stages of defence planning and be kept up-to-date as the situation develops. Possible options in a counter-attack could include the recovery of lost ground, cutting-off or destroying enemy units, or indeed any action that seeks to restore a situation. Once the commander has decided that a counter-attack can be mounted, he will launch it with the full force of all available resources necessary to ensure success.

530. **Interdiction.** If the enemy commander is permitted freedom of action to employ his supporting echelons when and where he chooses, it may be possible for him to deploy sufficient combat power to achieve overwhelming superiority at the point of contact and thus overcome the most determined defence. The commander will prevent the enemy from obtaining an unacceptable level of combat power at the FEBA by a systematic and sustained attack on enemy follow on forces. Enemy echelons not yet in contact and uncommitted reserves will be monitored throughout the commander's area of interest and engaged throughout the depth of his area of influence. In doing so, the commander aims not only to destroy and delay the enemy force, but to disrupt the enemy commander's plan and seize the initiative. This attack on the enemy's forces in depth is complementary to both the covering force actions and the battle in the defence area. Integration of the available assets to conduct this interdiction requires extensive and continuous coordination between air and ground commanders but will yield a significant capability to see and strike deep targets.

531. **Maintenance of Cohesion.** The importance of cohesion to the overall effectiveness of the defence is discussed in detail in paragraph 511. If the defence is to remain viable, the commander must be prepared to adjust the layout to meet changes in the threat in order to maintain cohesion. The following points should be noted:

- a. Gaps may be accepted between positions, but they must not be left where the probable main enemy thrust is expected. They must be kept under surveillance, covered by fire or, where possible, blocked by barriers. The responsibility for this must be clearly defined. Forces should be identified to deal with any enemy penetration of gaps.
- b. If it becomes apparent in the course of the battle that the cohesion of the defence cannot be maintained, the next higher commander may assign additional reinforcing, blocking or counter-attack forces from his own resources.
- c. Any decision to withdraw forces must take into account the situation prevailing in adjacent defence areas. A new FEBA may only be determined by the Commander who has ordered the defence.

532. **Reorganization.** Whenever necessary, even during short intervals in combat, formation and units must be reorganized, resupplied, and brought up to strength. Work must be carried out to repair any damage to defence positions, barriers and movement/supply routes. Once the enemy attack has been defeated, every opportunity should be taken to restore the situation in conjunction with flanking formations.

SECTION VI COMMAND AND CONTROL

533. **Command**. It is important that the commander should:

- a. Reconnoitre the area of operation before he determines his concept of operations and plans the layout.
- b. Maintain, wherever possible, personal contact with his subordinates. In times of stress, a visit or a person-to-person conversation will do much to instil confidence and to impress the commander's personality upon his command.

534. **Liaison and Communications**. Close liaison and good communications are prerequisites for successful defence:

- a. Coordinating points will be designated, and liaison established at key levels.
- b. In multinational operations, it is particularly important that commanders of temporarily assigned units make personal contact with their superior commander as soon as the situation permits.
- c. Before contact is made with the enemy, electronic emissions must be kept to a minimum. Forces not in contact with the enemy should be on radio silence. Nevertheless, alternate communications must be maintained at all levels.
- d. Because of the threat posed by enemy electronic warfare, cable and radio relay communications are the most important means of communication. After enemy contact and the relaxation of radio silence, radio communication will become significant, but traffic should still be kept to a minimum.

535. **Control Measures**. The following control measures are important in defensive operations:

- a. Boundaries.
- b. Handover line.
- c. The forward edge of the battle area (FEBA).
- d. Coordinating points.
- e. Check points.
- f. Forward line of own troops (FLOT).
- g. No fire lines.
- h. Minimum safety distances.
- i. Airspace control (as covered in ATP-40).

- j. Phase lines (including the handover line).
- k. Sectors.
- l. Light lines.
- m. Assembly areas for reserves.
- n. Barrier Restricted Zones.
- o. Controlled routes/Reserve Demolitions.

SECTION VII COMBAT SERVICE SUPPORT

536. **General.** The CSS plan must be flexible. Particular points of note are:

- a. In the defence, it should be possible to preposition stocks and maintenance resources and to establish medical facilities beforehand, and it is from these resources that troops may be supported in the first days of combat. In this way, provision is made for supplies to be available in the event of a surprise enemy attack. Possible delay in establishing CSS due to the length of lines of communications may impose, on commanders, a special responsibility to exercise economies until the resupply chain is established.
- b. CSS facilities are usually further to the rear than in offensive operations, both to avoid interfering with tactical operations and to obtain a degree of protection, although delivery should be as far forward as possible.
- c. Consideration must be given to the location and security of service support areas and traffic control within these areas.
- d. Planning must take into account the requirements of a transition to the offence. Mobility and flexibility in CSS operations must be maintained to support subsequent counterattack and other offensive operations.

537. **Special Considerations.** Special consideration should be given to the following points.

- a. Rear area security and protection.
- b. The high consumption of ammunition, particularly artillery rounds, may necessitate special delivery programmes. Bulk ammunition should be delivered as far forward as possible.
- c. Fuel should be transported, as far as practicable, by pipeline, rail, road tanker or by inland waterways.
- d. Repair should be conducted within defensive positions if possible, in order to minimise movement.
- e. The siting of medical resources, including evacuation facilities, should be as far forward as is practicable, to ensure the rapid treatment and evacuation of casualties. They should not, however, be located near to likely targets eg other logistics installations, in order to avoid collateral damage.
- f. Coordination of CSS in multinational operations.
- g. The location of supplies should emphasise dispersement, good access to supply routes, stock levels and should be conducive to resupply defensive operations.
- h. Priority of supplies assists in allocating scarce transportation assets.

CHAPTER 6

DELAYING OPERATIONS

SECTION 1 FUNDAMENTALS

601. **Application.** Delaying operations can be conducted independently or within other types of operation. Particular attention is given here to the delay as an independent type of operation.

602. **Purpose.** Delaying operations provide the basis for other operations by yielding ground while retaining flexibility and freedom of action to inflict the maximum damage on the enemy. Delaying operations can take place in deep, close or rear operations. They will assist in the creation of favourable conditions for offensive or defensive operations by other parts of the force.

603. **Objectives.** The intention of the operation will be one or more of the following:

- a. To slow down the enemy's advance by inflicting casualties which reduce his offensive capability in order to gain time for subsequent operations.
- b. To manoeuvre the enemy into areas where he is vulnerable to attacks/counter-attacks, thereby gaining the initiative.
- c. To avoid combat under undesirable conditions thereby preserving forces.
- d. To determine the enemy's main effort.

604. **Principles and Factors.** The following principles and predominant factors are of particular importance for delaying operations.

- a. Intelligence.
- b. Combining movement and firepower.
- c. Terrain.
- d. Time.
- e. Space.
- f. Aggressive action.
- g. Maintaining freedom of action.
- h. Electronic warfare.
- i. Security and protection.
- j. Deception.

605. **Intelligence.** A permanent flow of accurate intelligence will be vital to delaying operations. Timely and sound information from intelligence means at all levels of command will be needed throughout the delaying operation on enemy intentions, capabilities and weaknesses.

606. **Combining Movement and Firepower.** Movement in combination with long-range fire ensures that the enemy can be worn down without close contact. The delaying force will use manoeuvre and fire to disengage and move to new positions when the enemy concentrates superior forces.

607. **Terrain.** The force must make the best use of terrain, thereby forcing the enemy to conduct time-consuming and costly operations in order to gain ground. If possible, terrain should be selected which:

- a. Has good natural barriers, or barriers which can be easily improved and, in conjunction with these, can be used to canalize enemy movement.
- b. Provides good observation and fields of fire for the delaying force.
- c. Allows easy disengagement of the delaying force.

608. **Time.** The two essential timings in any delaying operation are:

- a. The time available for friendly forces to prepare positions. This will include reconnaissance, deployment and barrier preparation.
- b. The length of the delay to be imposed. This will be incorporated into the mission given to the Commander.

609. **Space.** The area allocated must have sufficient depth to allow delaying operations to be conducted. If depth is reduced, the length of delay that can be imposed will be shortened unless there is a compensating increase in the strength of the delaying force or an acceptance of high losses which might lead to a decisive engagement of the force as a whole.

610. **Aggressive Action.** The delaying force must take every opportunity to initiate aggressive action. Attacks should be undertaken whenever losses or damage can be inflicted on the enemy by the delaying force.

611. **Maintaining Freedom of Action.** A commander of a delaying force must be careful to organize his forces so that they can deal with unexpected situations. This requires a judicious distribution of the forces between those which are engaged in tasks of maintaining surveillance, delaying the enemy aggressively, withdrawing to the next delaying position or are available as a reserve.

612. **EW.** EW is explained more fully in Chapter 3, Section II. In essence, the delaying force should employ EW resources to disrupt and confuse the advancing enemy; using jamming and deception against reconnaissance elements, command nets and fire control nets. These actions should be accomplished in all phases of a delaying operation. They may greatly assist in disengagement, counter-attacks and relief of forces. EW resources will continue to provide information on the enemy.

613. **Security and Protection.** Security and protection are essential to the delaying forces to avoid their being surprised and an unwanted decisive engagement occurring. This involves not only the maximum

use of concealment and camouflage, deception, communications security, electronic warfare and all counter-intelligence measures but also the protection of critical points required for movements at natural defiles and bridges. The acceptance of gaps is inherent in delaying operations; as a rule formations must provide flank security for themselves. Major formations may decide to monitor extended and less threatened areas while concentrating the bulk of their forces in the main effort.

614. **Deception.** Deception is necessary to reduce the inherent vulnerability of a unit during movement to the rear. Deception should be used to help maintain secrecy during the movement and to aid in achieving surprise.

SECTION II FORCES AND TASKS615. **Employment of Combat Forces.**

- a. **Armoured Forces.** Forces composed of tanks, armoured infantry and armoured reconnaissance elements are highly suitable for delaying operations in most types of terrain. Their firepower permits them to engage the enemy effectively at long ranges, their mobility permits them to move quickly between successive positions or to a flank, while the protection afforded by their vehicles facilitates disengagement. Similarly, their mobility, firepower and superior communications give them the capability of launching counter-attacks when an opportunity to do so has previously been created.
- b. **Non-Armoured Forces.** Non-armoured combat forces only have a limited capability to carry out delaying operations except in broken, close or built-up terrain with extensive use of barriers. They will fight from a succession of suitably prepared defensive positions, in each case forcing the enemy to deploy for a coordinated attack before they withdraw to their next position. Their lack of protection will demand greater attention to the operations of disengagement and movement between positions, which should be carried out under cover of fire support, using routes that are concealed from the enemy. Similarly, non-armoured troops are not particularly suitable for conducting a fighting withdrawal. However, such an operation is feasible against a dismounted enemy in close terrain, which offers cover for movement and is favourable for ambushes and raids. Non armoured forces can also participate in stay-behind operations.
- c. **Airmobile Forces.** Airmobile forces can be employed in delaying operations although they face the same restrictions and problems as other non-armoured forces. They are capable, however, of rapid deployment and redeployment, permitting quick concentration of combat power at key locations. Similarly, they are capable of rapid dispersal to reduce vulnerability. They can also be used as a reserve force to permit the commander to commit a larger part of his other forces to the operation, as well as acting as flank protection.
- d. **Airborne Forces.** Airborne forces have a more limited capability than airmobile forces in delaying operations because of their lack of mobility and firepower once on the ground and the need for assistance in extrication. They can, however, be employed in area interdiction operations with the aim of preventing or hindering enemy operations in a specific area. Terrain which is heavily wooded, hilly or dominated by a river or other obstacles, and which hinders the enemy's off-road mobility, is best suited to this type of operation.
- e. **Armed/Attack Helicopters.** Air manoeuvre in delaying operations is very similar in character to air manoeuvre in offensive operations. Helicopters play an important role by disrupting the enemy's progress through the use of rolling ambushes which produce a fluid and mobile defence throughout the enemy's depth which will delay and shape the enemy for the close battle. Armoured attack helicopters can effectively support delaying ground forces by engaging enemy armour - preferably from the flanks or long range. They may be used to achieve rapid deployment of the anti-armour defence including deep attacks to cover the disengagement of combat forces and to achieve surprise. Helicopters can also be effectively employed where a commander does not wish irrevocably to commit ground forces to the delay; forward of a reserve demolition or obstacle for example.

616. **Employment of Combat Support Forces.**a. **Artillery.**

- (1) Artillery can make a major contribution to delaying operations by striking the enemy with concentrated fire at maximum range. Its capability to defeat a wide variety of targets in a short time and to deliver scatterable minefields should not only be used to inflict casualties and weaken the enemy's offensive capabilities but also to create situations which permit aggressive manoeuvre of combat forces. Interdiction fire against follow-on forces can restrict the immediate battle to the enemy's committed forces.
- (2) By providing immediate and accurate support, the artillery can halt the leading elements of an enemy attack and by delivering suppressive fire during the disengagement of friendly forces it can prevent the enemy from closing with the delaying force.
- (3) The artillery must be organized and positioned so that it can provide uninterrupted fire support throughout the delaying operation.

b. **Air.** Air operations contribute to overcoming the enemy's initial advantage in freedom of action in the following ways:

- (1) **ISTAR Operations.** ISTAR operations contribute to identifying an adversary's strength and disposition at an early stage, allowing the commander to concentrate his forces in favourable positions.
- (2) **Counter Air Operations.** It may be necessary to gain local air superiority to enable delaying forces to move.
- (3) **Anti-Surface Force Air Operations (ASFAO).** AI, particularly at defiles and crossings, can delay, destroy or neutralize enemy follow-on forces on their approach routes and thereby assist in gaining time to defeat the enemy's leading elements. Often it is only through the employment of aircraft that enemy penetration through an area or gaps can be delayed until ground forces can be moved to engage them. CAS in certain situations will make it possible to create an additional concentration of fire. In this, as with all forms of tactical air support, a close cooperation with all airspace users must be assured.

c. **Helicopters.** Reconnaissance, utility and transport helicopters can play an important part in delaying operations by:

- (1) Providing command, control and communications facilities.
- (2) Providing reconnaissance, surveillance and target acquisition.
- (3) Moving demolition guards, firing parties and barrier munitions.

- (4) Lifting non-mechanized infantry, particularly before the delaying operation and during their disengagement.
 - (5) Laying scatterable mines.
 - (6) Evacuating casualties.
 - (7) Moving supplies, spare parts and maintenance working parties.
- d. **Air Defence.** Delaying operations are likely to be conducted in conditions of air threat. Good coordination and close liaison between manoeuvre and AD forces is the key for successful protection against attacks during delaying operations. Movement through choke points and the reception of the delaying force are critical. Detailed planning is required to ensure the timely provision of air defence for these actions. There are unlikely to be sufficient air defence resources available to provide adequate cover throughout the area of operation. Priorities of tasks must, therefore, be established and redeployment planned to ensure effective air defence at critical times and points.
- e. **Engineers.**
- (1) Engineers support delaying operations primarily by preparing barriers including minefields and demolitions. Situational minefields with a predetermined effective time in combination with anti-tank weapons contribute decisively to reducing the enemy's offensive potential. Difficult terrain may make it necessary to give some priority to improving and maintaining routes for the manoeuvre of the delaying force.
 - (2) Engineers are employed on request of the combat forces. They should be given the maximum time to plan and accomplish their tasks.
 - (3) The responsibility for barriers must be carefully laid down to include the detailed arrangements for their security and closure. All delaying forces must know which gaps through barriers and crossing sites will be kept open for their use, and the commander responsible for the closure must be clearly designated.
 - (4) Engineers will also be required to give advice and help in the preparation of defensive positions and in the clearance of fields of fire, particularly in built-up areas.
 - (5) Armoured engineers should move with the troops closest to the enemy to undertake route denial, fire demolitions, and lay or scatter mines.
- f. **EW.** The delaying force should employ EW resources to disrupt and confuse the advancing enemy; using jamming and deception against reconnaissance elements, command nets and fire control nets. These actions should be carried out in all phases of a delaying operation and they may greatly assist in supporting disengagement, counter-attacks and relief of forces. EW resources will continue to provide information on the enemy.

SECTION III ORGANIZATION

617. **General.** In delaying operations the organization of the area used is similar to that of the defence. The delay normally starts on a line given in the mission and extends rearward to a line where responsibility for the enemy is passed to another force, or to a line where the type of operation changes (ie normally the FEBA, a phase line forward of the FEBA, or possibly the handover line). Within the area given, the forces will usually be assigned lateral boundaries. Unit and formation frontages will tend to be larger than in the defence. The commander of the delaying force has to decide which parts of the assigned area he will use for his operation, which parts he may abandon earlier than others, and which ones may only be monitored.

SECTION IV PLANNING AND PREPARATION618. **Planning.**

- a. Before a commander can make his estimate of the situation for a delaying operation he must be very clear of the intention of his superior commander and what he wishes to achieve by deploying the delaying force. Once this is understood he will make his estimate of the situation, develop his concept of operations and prepare his plan to cover the entire action from initial deployment to its termination. The concept of operations and the plan will pay particular attention to:
 - (1) **Tasks.** The allocation of tasks to the forces available.
 - (2) **Phasing.** The separation of the operation into phases, all parts of which must be completed before another phase can start, where this is necessary. Indiscriminate use of phasing can slow operations unnecessarily.
 - (3) **Terrain.**
 - (4) **Barriers.**
 - (5) **Fire Support.** The use of long-range fire to inflict early casualties on the enemy and avoid decisive engagement.
 - (6) **Covering of Gaps.** Gaps are a feature of operations. However, commanders must be aware of their existence and plan to ensure that they do not pose an unnecessary threat.
 - (7) **Flank Protection.**
 - (8) **Deployment in-Depth.** The force must also be deployed in-depth to counter penetration between the forward units and to guard against airborne or helicopter borne assaults on defiles and reserved routes.
 - (9) **Control of Fire and Movement.** Report and phase lines are used to control the movement of forces. Orders can be given to fill any gaps or to adjust the lines should there be a danger of a breakthrough.
 - (10) **Coordination.** Careful coordination between adjacent units, including measures to avoid fratricide.
 - (11) **Demolition Control.** The need to carry out demolitions early can hamper the deployment of friendly forces. It is, therefore, essential that the planning, particularly for preliminary demolitions, minefield gaps and reserved demolitions, is closely coordinated with movement and manoeuvre.
 - (12) **Denial Measures.** The denial plan will be closely coordinated with host nation authorities.

- (13) **Surveillance.** The maintenance of surveillance coverage of the entire area of intelligence responsibility is normally a considerable undertaking which encompasses imagery, electronic warfare and all human collection resources. It requires careful planning and coordination.
- (14) **Combat Service Support.** The support of highly mobile operations conducted over considerable distances requires foresight and flexibility.
- b. The amount of delay which can be ordered will depend upon the commander's estimate of the situation. The duration of the delay to be obtained is then laid down in the mission.

619. **Preparation.**

- a. Sufficient time should be allocated to establish the task organization, carry out the reconnaissance, select positions, select and prepare obstacles and barriers, carry out preliminary movement, coordinate with adjacent units and establish combat service support.
- b. **NBC Defence.** NBC attacks on defiles or reserve demolitions will complicate their defence and the passage of forces through them. Consideration must be given to the decontamination of such forces in order to avoid spreading contamination to new positions. Chemical attacks on withdrawing troops or civilian refugees could have a psychological effect out of proportion to the casualties inflicted.

SECTION V CONDUCT620. **General.**

- a. **Concept.** A delaying force will not only make use of the depth of the area assigned but it will also attack the enemy in his depth. If there is no opportunity to attack the enemy's flank or rear, it may be sufficient to position available combat troops so that they can engage the enemy along his most likely approaches. Gaps must be kept under surveillance and provision made for quick reaction should the enemy decide to utilize them for his advance. The commander must take into account that he may not always have a clear picture of the enemy and that the situation may change frequently and rapidly. He must therefore ensure that he has a continuous flow of sound and timely intelligence, has well organized reconnaissance, uninterrupted communications and a strong reserve. By these means, the commander can ensure that he maintains his freedom of action. He must utilize the forces and means available to him in such a way that the enemy is repeatedly faced with unexpected situations. This requires flexibility and agility as well as strong reliance on the subordinate commander's capabilities to determine on the spot the most suitable action to be taken. Combat troops will normally conduct the delay by a combination of techniques, offensive and defensive, such as temporary defence, vigorous counter thrusts and deliberate counter-attacks.
- b. **Reconnaissance.** The delaying force itself will require timely and continuous information about the enemy. This will necessitate the employment of reconnaissance elements which will immediately establish and maintain contact. These elements should be of sufficient strength that they cannot easily be brushed aside by the enemy. At the start of hostilities these forces may be the only elements on the ground that can provide accurate information to identify enemy activities. As the battle develops, a part of the reconnaissance element may be used to provide security and protection of flanks and to gaps between the main elements of the delaying force.
- c. **Execution of the Delay**
 - (1) At the earliest opportunity, the delaying force will engage the enemy, inflicting casualties by providing maximum fire in combination with mobile actions, including quick and limited counter attacks against enemy troops who have overextended themselves or have exposed an open flank. Opportunities are most likely to occur when the enemy has just crossed an obstacle or is temporarily separated from his follow-up troops.
 - (2) Every advantage offered by the terrain should be exploited. The rapid advance of the enemy, particularly along roads, should be impeded, causing him to bunch and offer himself as target. Every opportunity should be taken to surprise him and to ambush him, taking care to avoid becoming too closely engaged, by timely manoeuvre.
 - (3) Even if elements of the delaying force are in danger of being overrun, or seriously outflanked, they will not disengage unless ordered or unless it is in accordance with the mission. However, it is an important task of the commander by timely disengagement, to prevent parts of his force being cut off and destroyed.

- (4) The fluid situation prevailing during delaying operations will necessitate constant and close coordination between adjacent units to ensure:
 - (a) Positions and manoeuvre of own troops is known.
 - (b) Mutual support of fire.
 - (c) Awareness of the beginning and end of specific operations.
 - (d) Awareness of the situation and probable intention of the enemy.

621. **Employment of Reserves.**

- a. **Reserves.** Reserves are important for the maintenance of the cohesion and continuity of delaying operations particularly where the enemy has been able to outflank or to penetrate through gaps between delaying force elements. Their tasks may be:
 - (1) **Blocking.** Containing the enemy in the area where insufficient forces have previously been deployed.
 - (2) **Counter-Attacks.** Normally these will have limited objectives. It may be necessary to use reserves to counter-attack into gaps or in order to achieve disengagement of heavily committed forces.
 - (3) **Covering Actions.** Reserves may also be used in prepared positions to cover withdrawing forces in order to enable them to continue the engagement in more favourable terrain.
- b. Because of the width of the combat sector, it will often be necessary to establish local reserves, rather than relying upon forming one concentrated reserve force. At a lower level, reserves will be minimal or simply consist of the employment of an element of the force that is not actively engaged; at higher echelons forces may be specifically designated as reserves.

622. **Disengagement.** Troops withdrawing from a position must attempt to break contact with the enemy. This can be achieved by withdrawing through a position occupied by another unit, or suddenly breaking off the engagement when the enemy is unbalanced and unable to follow up immediately. The important decision is to judge the correct moment when to withdraw from each position. This must not be too early because this would result in failure to achieve maximum delay, not too late so that there would be a risk of unnecessary casualties or of being overrun. Counter-attacks may be necessary to achieve disengagement.

623. **Breaking Contact.**

- a. The move of the delaying force into an area where another force takes over responsibility can be a critical operation, especially if the force has been unable to disengage. The overall commander will lay down a handover line. This is discussed in Chapter 7, Section V.
- b. If the delaying operation is being succeeded by a defence, elements from the defending force may have to be deployed as far forward as the handover line. The enemy should be given

as little indication as possible of the intention to disengage. The move behind the FEBA must be planned and coordinated in detail. The withdrawing force must provide timely information on its planned withdrawal and on the battle situation for the force in position, attaching liaison elements to the rearward defensive force to identify withdrawing units as they approach and pass through.

SECTION VI COMMAND AND CONTROL

624. **General.** In spite of the adverse characteristics of a delaying operation, the frequent and fast manoeuvre of troops, the frequently changing types of combat, the unclear air situation and at least initial freedom of action of the enemy the commander must focus on the superior commander's intent.

- a. The commander must command his forces so as to maintain a coherent, cohesive operation. This will require continuous direction to restore critical situations and to try to gain the initiative; good communications will be essential.
- b. There is a requirement for centralized, coordinated planning but decentralized control of the execution.
- c. Arrangements must be made by the formations in the rear for the control of the movement back from the handover line by the delaying elements.

625. **Control Measures.**

- a. Liaison.
- b. Boundaries, positions and objectives.
- c. Routes/axes.
- d. Report/phase lines.
- e. Handover line.
- f. Coordinating points.
- g. Traffic control.
- h. Checkpoints.
- i. Airspace control measures.
- j. Fire support coordination line (FSCL).
- k. Forward line of own troops (FLOT).
- l. The imposition of timings for critical phases.
- m. Passwords and recognition signals.
- n. Arrangements for closing minefield barriers and executing demolitions.
- o. Arrangements for executing denial measures.

SECTION VII COMBAT SERVICE SUPPORT

626. **General.** CSS considerations for delaying operations are similar to those for the defence and include:

- a. Support elements and stocks echeloned rearward on successive positions; whenever possible, supplies should be kept mobile. Careful consideration should be given to the operational plan before stocks are deployed in prepositioned dumps.
- b. The evacuation of supplies and equipment that have been prepositioned should be planned as early as possible; those which cannot be moved should be destroyed. Medical support must provide for the rapid evacuation of casualties to rear area medical facilities. Medical supplies and equipment, in accordance with the Geneva Conventions, must be marked as such and left in place if they cannot be evacuated.
- c. Maintenance should be concentrated on the equipment required to conduct delaying operations and withdrawal. Unserviceable equipment which cannot be repaired immediately should be evacuated to rear areas. Recovery vehicles should be positioned at critical locations to keep routes open.
- d. Transportation priority should be given to the movement of combat troops and their supplies, the movement of material used to impede the enemy, and the evacuation of casualties and repairable equipment.
- e. A major consideration is to sequence and coordinate the movement of CSS to ensure that the delaying force has continuity of support. After crossing the handover line the delaying force will often need to be refurbished.

CHAPTER 7**TRANSITIONAL PHASES DURING OPERATIONS****SECTION I ADVANCE TO CONTACT**

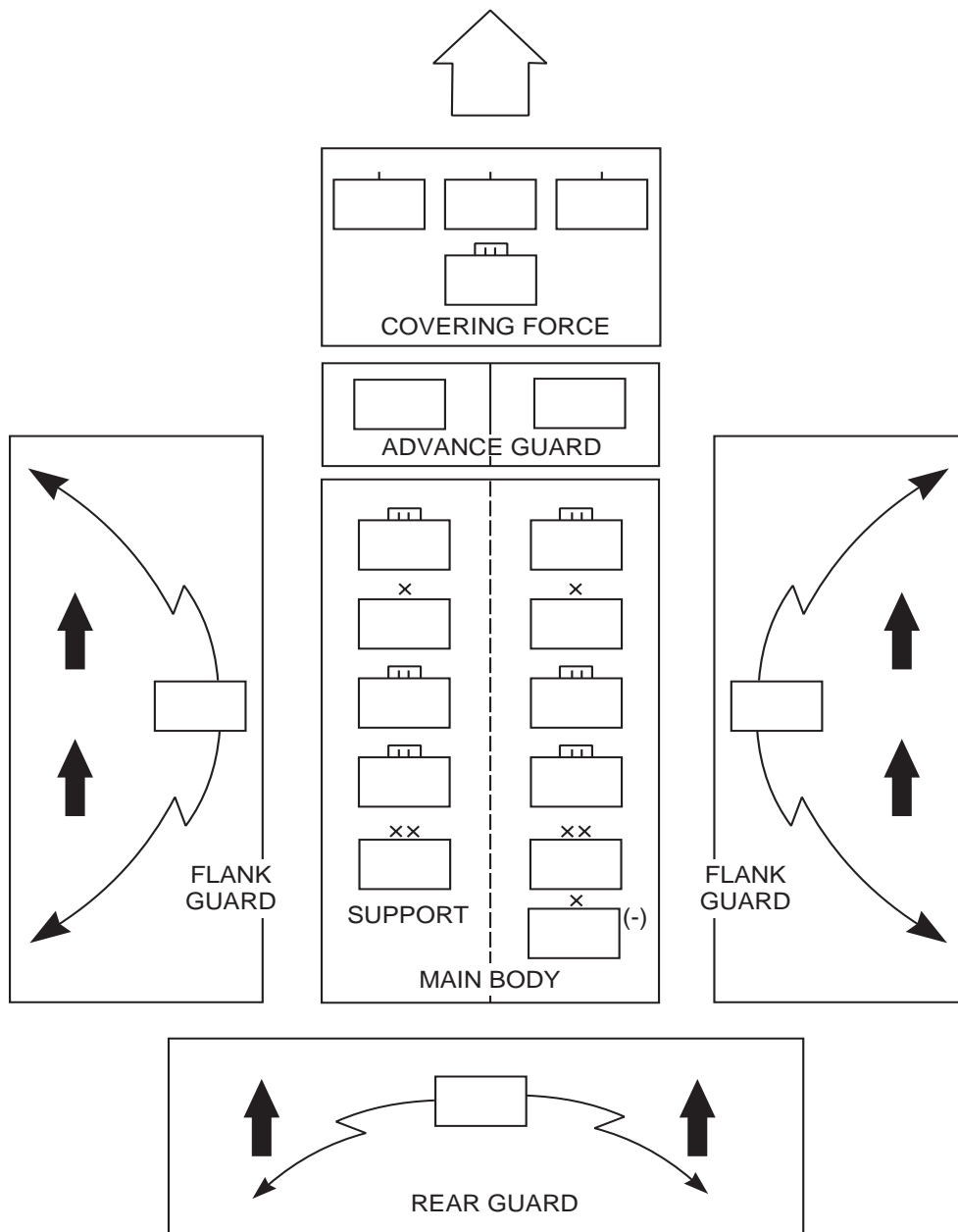
701. **Introduction.** This section gives the doctrine for the advance to contact, the operation in which forces seek to gain or re-establish contact with the enemy. By seeking contact, it differs from the meeting engagement where contact is made unexpectedly. The meeting engagement is dealt with in Section II of this chapter.

702. **Employment Considerations.**

- a. The advance to contact seeks to gain or re-establish contact with the enemy under the most favourable conditions for the main force. In order to achieve this, extensive reconnaissance will be required. Enemy protective elements must be destroyed or neutralized without impeding the movement of the main body. Provision must also be made for flank protection.
- b. The advance to contact is always executed in preparation for a subsequent operation and is terminated when the main body is positioned in accordance with the commander's plan. Subsequent operations will be determined by the mission assigned to the main force which may also evolve from the posture of the main body when contact is made with the enemy.
- c. By the advance to contact, the force seizes and maintains the initiative. The operation may involve:
 - (1) Destroying or forcing the withdrawal of minor enemy elements.
 - (2) Seizing ground of tactical importance.

703. **Conduct of Operations.**

- a. **General.** In the advance, the tempo will change in accordance with the situation encountered. Bold rapid action should be combined with the retention of balance and control, so that enemy reaction and changes of terrain can be met without disruption. Subordinate commanders must be prepared to act boldly within the superior commander's intention and their missions, in order to surprise the enemy, keep him off balance and exploit success. The advance to contact ends either when the intended posture is achieved or when enemy action requires the deployment and coordinated effort of the main body.
- b. **Organization.** A force advancing to contact will normally incorporate the elements listed below which are diagrammatically shown in Figure 7-1.
 - (1) **A Covering Force.** The composition, size and operations of the covering force may influence the entire course of battle. Its mission is to obtain information on the enemy and to prevent unnecessary delay of the main body. It should be a highly mobile, well-balanced force, capable of attacking and destroying enemy reconnaissance elements,



**Figure 7-1: An example of deployment for advance to contact
(Division size force shown)**

breaching obstacles or finding a bypass, securing and holding key terrain, and containing forward enemy units. Integrated helicopter and armour forces provide a mobile and flexible force capable of achieving rapid reconnaissance in the advance.

- (2) **Advance Guard.** The advance guard, as the lead element of the main body, is used to expedite its movement, maintain contact with the covering force, and provide security to the immediate front of the main body.
- (3) **Flank and Rear Guards.** Flank and rear guards protect the main body from ground observation and surprise attack. They should be strong enough to defeat minor enemy forces, or to delay strong attacks until the main body can deploy.
- (4) **The Main Body.** The main body contains the main combat power of the force. Its units are organized into combined arms elements and are so positioned in the advancing columns to permit maximum flexibility for employment during the movement or once contact with the enemy is established. The position of the main body in relation to the covering force and advance guard is an important decision for the commander. Observation, surveillance and close coordination with air reconnaissance contribute to the security of the main body.

c. **Planning.**

- (1) Planning must make the best use of intelligence from all sources, including air reconnaissance, which will be of particular importance. When moving, it is best to advance with multiple columns. This permits combat power to be deployed well forward and decreases the dependence on any one axis. In this operation, security elements are of particular importance because the force is vulnerable on all sides.
- (2) Conditions of reduced visibility provide some protection from enemy observation and air attack but may also result in difficulties in establishing contact, in coordination and orientation. This places increased reliance on non-visual reconnaissance and surveillance means.

d. **Execution.**

- (1) The advance will be led by the covering force which always contains reconnaissance elements. Possible tasks are:
 - (a) To locate and define the strength of enemy positions.
 - (b) To find and exploit any gaps, so as to provide information on possible routes for enveloping or bypassing action by the advance guard and main body.
 - (c) To obtain information on routes, obstacles and terrain conditions affecting movement and reduce obstacle if necessary.
 - (d) To conduct deep penetration, either to disrupt enemy communications and logistics units, or, possibly, to seize a crossing site, in particular a bridge, or defile.

- (2) The tactical handling of the advance guard and the main body will depend on the number of routes available. The rate of advance will vary across the front and will depend on the terrain, the location and strength of enemy positions and the possibility of bypassing the opposition. The grouping within the main body must be sufficiently flexible to allow elements to:
 - (a) Take over the advance guard role.
 - (b) Change direction or routes of any of the elements of the main body either to bypass enemy positions or take advantage of better routes.
 - (c) Deal with the enemy which has been bypassed or is holding up the main force.
 - (3) The deployment of the flank and rear guards will depend on the assessment of the threat. In some situations, flank protection may be provided by a flanking formation. Armoured reconnaissance units are suited to protect the flanks of the advancing force by moving on a route parallel to the main axis or by picketing lines of approach. They are unlikely to deal with a strong enemy force, but will give early warning of an enemy approach, and create the necessary time for the main body and reserves to react.
 - (4) On contact, speed, manoeuvre and initiative may overcome the enemy before he can react. The sequence of action on contact might be as follows:
 - (a) Action by the covering force to eliminate or contain the enemy while he is bypassed.
 - (b) Immediate and vigorous manoeuvre to test the enemy strength and find gaps or weaknesses.
 - (5) It is of the utmost importance that the momentum of the advance is maintained. The commander may order enemy opposition to be bypassed while they are being contained by the forces in contact. He may also order that the enemy is destroyed by follow-up forces.
- e. **Employment of Combat Support Forces.**
- (1) **Artillery**
 - (a) Immediate and effective fire support will enable the force to engage the enemy, retaining freedom of action to bypass or to attack the enemy force. A heavy volume of fire will reduce the need to deploy troops on contact with the enemy.
 - (b) As the nature of the advance to contact is one of sustained movement, a high degree of fire support coordination is required. Artillery, mortars and ships providing naval gunfire must move in such a way that maximum support is available at all times. Forward observers must accompany leading elements and units on exposed flanks.

- (2) **Air.** Tactical air support is required in the advance to contact, to:
 - (a) Assist in protecting advancing units from enemy air attack.
 - (b) Provide information and intelligence about the enemy.
 - (c) Provide close air support to supplement artillery, particularly when it is not possible to concentrate its fire.
 - (d) Interdict enemy units attempting to withdraw or reinforce.
- (3) **Helicopters.** Helicopter support is used mainly for the following purposes:
 - (a) Surveillance and reconnaissance.
 - (b) Flank protection.
 - (c) Exercise of command and control.
 - (d) Seizure of critical points and key terrain features.
 - (e) Resupply and medical evacuation.
- (4) **Air Defence.** Air defence weapons must keep up with the advance. To achieve this, ground based air defence must have a priority for road movement. Likely tasks will include protection of vulnerable points on the route and cover for critical operations such as an attack, river crossing or breaching operation.
- (5) **Engineers.** The main role, of engineers in the advance is to open and maintain routes using specialist engineer equipment. They also have the tasks of assisting the leading troops to overcome obstacles and to clear mines, and of helping in the protection of the flanks. Engineers and their heavy equipment should be positioned so that they can be deployed quickly when required. An engineer reconnaissance element must move with the leading troops and engineer resources may have to be well forward.
- (6) **EW.** Emphasis will be placed on the employment of passive EW (intercept and direction finding) resources in order to detect and locate the enemy.

704. **Command and Control.**

- a. Commanders should move well forward so that they can influence the battle quickly and make the most of fleeting opportunities.
- b. Normal command arrangements will be strained by distances and rapid movement. Command posts will be on the move, particularly at lower levels, as follows:
 - (1) As the main body normally moves on radio silence the problem of maintaining coordination along the routes will require special arrangements and may also cause

a restriction on the use of air defence assets.

- (2) Special arrangements may be required to provide additional radios for relay purposes.
- (3) Extensive use will have to be made of liaison elements.
- (4) Coordination with supporting air forces will present special problems.
- (5) The command responsibilities for each route and for traffic control must be established. Traffic control systems should be able to:
 - (a) Easily rearrange the order of march on routes allocated.
 - (b) Improve measures to keep routes open.
 - (c) Assist in regulating the flow of traffic to help units reach their destinations in a timely manner.
- (6) The command relationship between the various elements of the force must be established beforehand.

705. **Combat Service Support.**

- a. CSS must provide for the requirements of the advance and for the anticipated requirements of any subsequent mission. The support problem in the advance is that of sustaining forces which are moving and thus extending the supply lines. Because there will seldom be sufficient transport, a careful calculation of anticipated requirements must be made and priorities established.
- b. At the start of the operation, units should be as self-contained as possible and arrangements made so that they can be refuelled during the move. Engineer stores for bridging and route repair are likely to be a large transport commitment. It is important that maintenance and recovery resources and traffic control are deployed to keep routes open and assist units.
- c. Medical units should move with the force and be able to provide immediate treatment during movement. When contact is made with the enemy they should establish second line (Role 2) medical facilities rapidly. Helicopters should be available for evacuation of high priority casualties as the lines of communication may become extended.

SECTION II MEETING ENGAGEMENT

706. **Introduction.** This section outlines the doctrine for the Meeting Engagement. The Meeting Engagement is a combat action that occurs when both sides seek to fulfil their mission by offensive action. A Meeting Engagement will often occur during an advance to contact and can easily lead to a quick (hasty) attack. In offensive, defensive or delaying operations, it will often mark a moment of transition in that the outcome may well decide the nature of subsequent operations. This is why the Meeting Engagement is described as a Transitional Phase. Even when the main part of a force is defending, attacking or delaying, individual elements may find themselves in situations which have the characteristics of a Meeting Engagement. Although forces of divisional size or larger, given room for manoeuvre, may occasionally be involved as a whole in a Meeting Engagement, it is normally more applicable to the brigade level and below.

707. **Circumstances.** A Meeting Engagement can occur in various circumstances:

- a. It can occur when a force which is moving, either tactically or in column of route, makes contact with an enemy about whom the friendly force has little or no information.
- b. It can often occur by chance or when reconnaissance has been ineffective.
- c. It can also occur when both sides are aware of the other and decide to attack without delay in an attempt to obtain positional advantage, gain ground of tactical importance, maintain momentum or assert dominance over the enemy.
- d. Finally, a Meeting Engagement may also occur when one force deploys hastily for defence while the other attempts to prevent it.

708. **Seize and Retain the Initiative.** Meeting Engagements will usually force a commander to reconsider and often to adjust his plans. The basic principle in a Meeting Engagement is to seize and retain the initiative. This gives the commander the freedom of action he needs, either to accomplish his original mission or a fresh mission if he so decides. Success depends, to a large extent, on the speed of reaction of the commander and of his forces. He can then decide how to develop the Meeting Engagement into one of the three major types of operations (ie defence, offence, or delay).

709. **Characteristics.** The important characteristics of Meeting Engagements are a shortage of information about the enemy and a limited amount of time available for the commander to develop the situation. Plans must be drawn up and executed as quickly as possible. Success will depend primarily on the ability of the commander to anticipate a Meeting Engagement and to bring to bear, fully and quickly, the combat power at his disposal. Thus, at all levels, bold, vigorous action by subordinate commanders is often the key to success. Prompt action to gain control of the situation quickly will reduce the enemy's chances of carrying out his plans and may help to preserve freedom of action. Well rehearsed drills will be of immense importance.

710. **Meeting Engagements against a Superior Enemy.** If the enemy is much stronger, or if he is at a higher state of combat readiness, it may be necessary for the force in contact to engage him with the maximum combat power available, in order to hinder him from deploying his forces and prevent him from

using favourable ground. This will gain time to allow action to be taken by a superior commander.

711. **Conduct of Operations.**

a. **Organization and Planning.**

- (1) It will not be possible to plan in detail for this kind of operation. However, a force that is properly deployed in accordance with recognized tactical principles will be poised to react to most situations.
- (2) While commanders can make no firm plan, they must conduct an intelligence estimate. In particular they should study the terrain, weather and the map to deduce any areas in which it would be particularly likely for a meeting engagement to take place. Additionally, they should take particular note of the latest situation or intelligence reports and assessments.

b. **Execution.**

- (1) The commander whose forces make contact with the enemy in a Meeting Engagement must immediately decide how he wants to fight the battle. In deciding on a course of action he must not lose sight of his original mission. If he is forced to deviate from it, his actions must remain within the overall commander's intent or concept of operations. On the other hand, he must not shirk his responsibility to act independently. Whatever decision he makes, it must be passed to the superior commander immediately.
- (2) One of the commander's first tasks in a Meeting Engagement is to determine the enemy's dispositions and strengths. He should particularly ascertain the situation on the enemy's flanks. While trying to identify the enemy's weakness, the commander must ensure that his own flanks are secure.
- (3) Often it will not immediately be possible to use all the forces that the commander might wish to deploy in a Meeting Engagement. In this case, he must establish an order of priority for deployment early in the operation. Throughout the operation he must keep a clear picture of the location and status of all elements of his force.
- (4) The commander's decision on how to continue a Meeting Engagement should, wherever possible, be based on his personal assessment of the situation on the ground. However, he must not sacrifice valuable time in order to obtain detailed information. He must realize that he is in a race for time and space with the enemy commander. It is, therefore, extremely important that, before the operation starts, the commander evaluates possible routes for movement and assesses any area of terrain that may be useful, and that he keeps these in mind while his force is moving.
- (5) The speed of reaction and considerable fire power of armed helicopters, allow them to be committed very quickly against the enemy in a Meeting Engagement. In particular, early deployment of reconnaissance and AH in a combat as opposed to a combat support role will nearly always give a commander an advantage.

c. **Employment of Combat Support Forces.**

- (1) **Artillery.** The amount of initial fire support available to the forces which become involved in a Meeting Engagement depends on the organization for movement laid down by the commander. It is, therefore, particularly important that there is fire support available to support the leading elements of a moving force. Forward artillery observers must be allocated to the leading elements of a combat force. A Meeting Engagement is also an ideal situation in which to make use of scatterable mines to restrict the enemy's freedom of manoeuvre.
- (2) **Air Defence.** Air defence weapons should be positioned along enemy air avenues of approach to overwatch forces on the move. Enemy ground forces will often be supported by armed helicopters or they may approach under air cover, or by air transport.
- (3) **Engineer.** The rapid deployment of engineers can be crucial in transitional phases of the battle. Engineer reconnaissance must be well forward as must armoured engineers. Combat engineers must be readily available for mobility or counter mobility tasks. An appropriate and quick employment of engineer equipments can ensure freedom of movement and deny it to the enemy. Engineer planning of scatterable mines, for example, can provide responsive counter-mobility support if the assets are available.
- (4) **EW.** EW (intercept and direction finding) resources will provide additional information on the enemy. Once battle is joined, jamming of enemy command and control and fire support communications will assist the commander in achieving his aim.

712. **Command and Control.** The problems confronting the commander in a Meeting Engagement are:

- a. Initially, he will have little intelligence on the strength, location and intention of the enemy. It may even be necessary for him to confirm the locations of his own forces. Immediate and clear situation reports from lower commanders are essential to allow him to make his plan.
- b. The headquarters may be on the move, and, therefore, its effectiveness may be restricted. The staff may be dispersed or the commander separated from them. Characteristically, units will be moving in radio silence and it will take time to activate communications between HQs.
- c. If a Meeting Engagement is likely, therefore, it is vital that commanders are well forward and able to speak to each other, even if their HQs temporarily cannot.

713. **Combat Service Support.**

- a. CSS must enable the commander to seize and maintain the initiative and must be capable of responding quickly to the rapid changes in plans which may occur. Because of the limited information available when a meeting engagement occurs combat service support commanders must be ready for the unexpected. Ensuring that combat supplies and materiel levels are maintained at the maximum practical level is one means of achieving this readiness.

- b. In a meeting engagement speed is the major criterion and combat service support planning is subordinated to achieving that. At the level above that which is in contact, combat service support should concentrate on directing its efforts on the formation or unit involved both during and after the battle. This might include:
- (1) Ammunition for the battle if there is time, and certainly after reorganisation.
 - (2) Refuelling after reorganisation.
 - (3) Move forward of medical support and the development of a casualty evacuation plan.
 - (4) Ensuring maximum availability of equipment both during the engagement and in preparation for subsequent operation.
 - (5) Planning for the recovery of battle-winning equipments.

SECTION III LINK-UP OPERATIONS

714. **Introduction.** This section gives the doctrine for link-up operations and outlines the various situations in which a link-up operation may be necessary.

715. **Employment Considerations.**

a. **Concept.**

- (1) A link-up operation is conducted where forces are to join-up in enemy controlled territory.
- (2) A link-up is the establishment of contact between two or more friendly units or formations which may have the same or differing missions. In a link-up operation, it may be necessary to destroy the enemy between these forces before contact can be established.

b. **Mission.** The mission to carry out a link-up operation will always be given in the context of a subsequent mission for the forces involved. It will normally state the location or the route where the link-up will take place. Frequently, a time will be stipulated for the link-up.

c. **Circumstances.**

- (1) A link-up with encircled or cut-off forces may take place on the perimeter of the defensive position established by that force, or, when the link-up is combined with a break-out action, at another designated objective.
- (2) A link-up operation with an air delivered or infiltrated force may take place on the perimeter of its defensive position. In this case, the link-up is normally followed by a passage of lines or by a relief of the forces involved.
- (3) A link-up between two forces engaged in converging attacks may take place when each force captures the adjacent objectives allocated. The procedures used are outlined in subsequent paragraphs.

716. **Conduct of Operations.**

a. **Organization.** Link-up operations are generally offensive in nature. The size and composition of the force will be determined by the requirements of the link-up as well as those of the subsequent mission.

b. **Planning.**

- (1) The requirement for the link-up may be part of the concept of operation. Equally, a link-up may become necessary in the course of an operation and must be planned as the situation develops. In any event, details of plans must be passed to all concerned in good time, without undermining security.

- (2) Particular attention should be paid to:
 - (a) The coordination of manoeuvre of the forces involved.
 - (b) Command relationships.
 - (c) Communications.
 - (d) Control measures.

c. **Execution.**

- (1) A major consideration in this type of operation is speed in establishing the link-up to reduce the possibility of enemy reaction and minimize the period of vulnerability.
- (2) For the moving force in a link-up, the operation may involve deliberate attacks or, if circumstances permit, the more rapid movement of an advance to contact deployment.
- (3) During the last phase of the link-up operation the speed of advance of the forces must be carefully controlled; reconnaissance elements must seek to establish contact with the other force as early as possible and additional information will be obtained to confirm/adjust earlier plans.
- (4) Subsequent operations must be launched as quickly as possible so as to exploit the success achieved by the link-up.

d. **Fire Support.** The following points are of particular importance:

- (1) **Direct and Indirect Fire Support.** Fire control must be carefully exercised until a link-up has been achieved in order to avoid losses. Normal fire control measures will be used by link-up forces; specific coordination must be established, however, for any phase when the fire of one force may affect the operations of the other.
- (2) **CAS/AH.** Particular attention must be given to the control of CAS/AH in the area between the forces as they approach the area of the link-up.

e. **Other Combat Support.**

- (1) **Engineers.** In link-up operations, mobility support of forces that are moving to link-up is critical. Clearing of routes and enemy barriers is essential for the timely completion of the operation.
- (2) **EW.** Employment of EW must be carefully coordinated in order to avoid mutual interference and duplication of tasks.

717. **Command and Control.**

- a. **Command.** The convergence of friendly forces in the area of the link-up may present particular problems which require the appointment of a single commander in the area. This procedure will also be normal when there is a significant difference in the size of the two forces taking part in the operation. Where this is the case, this commander must be designated beforehand and in sufficient time to allow for concerted action to be planned. The time or conditions under which command is assumed must be clearly stated.
- b. **Control Measures.** The following control measures require emphasis:
 - (1) Axis of advance or boundaries for the link-up.
 - (2) Objectives to be held and/or to be captured by each of the forces taking part.
 - (3) The locations where contact between the two forces will be established.
 - (4) The timings of the operation for the forces involved.
 - (5) Fire coordination lines and FSCLs.
- c. **Liaison and Communication.** Liaison between the forces taking part and with the overall commander is very important. Communications in these circumstances can normally be maintained by radio only. The majority of detail for liaison and communications will be laid down in the overall commander's plan; where that is not possible, these arrangements must be judiciously expedited on the initiative of the two forces carrying out the link-up operation. The measures include:
 - (1) Liaison teams.
 - (2) Passwords and visual identification signs.
 - (3) Report lines and reference points.
 - (4) Contact frequencies, radio authentication procedures and codes.

718. **Combat Service Support.** Apart from taking account of the requirements of the link-up force itself, the commander has to consider the need to provide combat service support for the force with which it is intended to link-up. In principle, CSS considerations are generally the same as those for offensive operations.

SECTION IV WITHDRAWAL OPERATIONS719. **Introduction.**

- a. This section states the doctrine for withdrawal operations. A withdrawal occurs when a force disengages from an enemy force in accordance with the will of its commander. It seeks to break contact with the enemy. This does not necessarily imply that reconnaissance and/or protective elements do not maintain surveillance over the enemy.
- b. **Retirement.** A retirement is different from a withdrawal in that it is a movement away from the enemy by a force out of contact with the enemy and is administrative in nature. It is not discussed further in this publication.

720. **Employment Considerations.**

- a. **Concept.** The order to withdraw will normally not be given by a commander unless it has the agreement or direction of his superior commander. A withdrawal may be undertaken for any of the following reasons:
 - (1) If the objective of the operation cannot be achieved and the force is threatened by defeat, or if the objective is achieved and there is no further requirement to maintain contact.
 - (2) To avoid battle in unfavourable tactical, NBC or environmental conditions.
 - (3) To draw the enemy into an unfavourable posture, eg to extend his lines of communications.
 - (4) To conform to the movements of adjacent friendly forces.
 - (5) To allow the use of the force or parts of the force elsewhere.
 - (6) For combat service support reasons.
- b. A withdrawal should be conducted so that enemy interference with the operation by offensive action is kept to the minimum; achieving this ideal will place great emphasis on intelligence, surprise and speed. However, as it must always be assumed that the enemy may react, provision must be made for the security of the withdrawing force. Protective elements must be organized and tasked in accordance with the enemy's capability.
- c. Due to the inherent difficulties of this type of operation the commander must have the flexibility to switch to any other type of operation as the situation demands (eg delay, defence or offence).
- d. **Mission.** The commander's mission is to disengage his force. If it is in response to the deliberate intention of a higher commander, the mission will be included in a complete operations order. If, on the other hand, the decision has been forced upon the commander

by highly unfavourable circumstances, the order to withdraw may contain nothing more than the authority to do so and give only minimum direction.

- e. **Characteristics.** The conditions under which a withdrawal takes place are often adverse. The enemy will then have the initiative on the ground and the force will be vulnerable to ground attack while moving rearward, perhaps having to redeploy to protect itself. In addition, the air situation may be unfavourable. In this case, the operation may have to be initiated in darkness or under conditions of limited visibility.

721. **Conduct of Operations.**

a. **Organization.**

- (1) A withdrawing force should normally be organized into:
 - (a) A protective element which covers the withdrawal.
 - (b) A main body protecting itself with advance, rear and flank guards.
- (2) The withdrawing force's subsequent mission will have an influence on its organization and on the sequence of the withdrawal.
- (3) Forces not required for immediate operations, including combat service support elements and wounded, should be moved out early to keep routes clear for the withdrawal.

b. **Planning.**

- (1) The commander's estimate of the situation should consider:
 - (a) The distance to be moved.
 - (b) The weather/ground conditions and the degree and duration of darkness. To maintain secrecy, achieve surprise and reduce casualties from the air, withdrawals are generally better carried out at night, although, against an enemy with a good surveillance capability, darkness will not hide movement. Bad weather conditions, however, such as heavy rain, mist or fog, may enable a withdrawal to be carried out effectively by day. Difficult ground conditions may make a withdrawal in daylight the only practical way to avoid loss of control.
 - (c) Possibilities of impeding the enemy's mobility - particularly by barriers.
 - (d) Enemy ground strength.
 - (e) The situation on both flanks.
 - (f) The mobility of the force.

- (g) The air situation.
- (h) Combat service support.
- (2) The plan should cover the entire operation. Particular attention should be paid to:
 - (a) The plan being simple to permit flexibility.
 - (b) Grouping for the withdrawal remaining the same, if possible, throughout the operation.
 - (c) Surprise and deception, possibly including noise coverage by artillery.
 - (d) The maximum use of cover and concealment to achieve protection.
 - (e) Allocation of routes and an appropriate traffic control system.
- (3) The preparation of demolitions and other obstacles along the withdrawal routes must be carried out as early as possible. This is particularly important for preliminary demolitions, which must be carefully coordinated with the plan for the withdrawing force.
- (4) The preparation of denial measures should be carried out as soon as possible and their execution carefully coordinated with the plan for the withdrawing force.
- (5) Along boundaries the preparation of denial measures should be coordinated by the appropriate higher level commander. Execution should be carried out carefully and in accordance with the plan of the withdrawing force. The final decision on the execution of any denial measures will be made by the higher commander after consultation with adjacent commanders.

c. **Execution.**

- (1) The disengagement of the main body could be executed either by stealth and concealment or after a successful engagement.
- (2) The task of the protective force is to prevent the enemy from engaging the main body. As soon as the main body has disengaged and is at a safe distance, the protective elements start their disengagement, although they may remain in their original position until the enemy attacks in force, so as to achieve the maximum deception and delay. If the enemy launches a strong attack against them, they will continue their protective task by delaying operations. If the distance to be moved is great and the enemy is expected to react quickly, a portion of the protective force may occupy a number of intermediate defensive positions in the rear of the position being abandoned before the withdrawal of the main body. The versatility and long-range firepower of armed helicopters make them particularly suitable to support the operations of the protective element.

- (3) If the protective element is not able to disengage or to prevent the enemy from closing in on the main body, it must either be reinforced by elements from the main body, or the overall commander must commit the majority, or all, of his force. In this event, although the withdrawal has been interrupted, it must be resumed at the earliest possible time. If the protective element has managed to disengage, it will follow the main body and continue to provide security. In any case, it will maintain surveillance of the enemy until ordered to disengage or until this task is taken over by another force.
- (4) A withdrawal is terminated when a force is ready to assume its next task.

d. **Employment of Combat Support Forces.**

- (1) **Artillery.** Artillery must be organized and deployed so that it can cover the entire operation. Long range artillery will be withdrawn early and placed far enough back so that they can cover the withdrawal. Artillery elements remaining with the protective elements will endeavour to maintain the previous fire support cover for as long as possible.
- (2) **Air.** AI and CAS may play an important part in harassing the enemy following up the withdrawal or attempting to bypass the withdrawal forces. Close air support will be particularly useful, especially where withdrawing artillery causes a reduction of, or interruption to, indirect fire support. Forward air controllers will be required with the protective element. Defensive counter air (air defence) effort may be needed for protection against enemy ground attack aircraft.
- (3) **Helicopters.** Transport helicopters can enhance the speed with which withdrawal operations can be carried out. Helicopters in a reconnaissance role may be used to observe enemy activity during the withdrawal. Helicopters can also be used to extract stay-behind forces.
- (4) **Air Defence.** There are unlikely to be sufficient organic air defence resources available to provide comprehensive cover throughout the area of operation, so priorities of tasks must be established. The deployment plan of air defence units should ensure that they are effective at critical periods to cover locations where the withdrawing forces are likely to be particularly vulnerable or areas which the enemy might select as landing sites for air delivered forces.
- (5) **Engineers.** Engineers will be very heavily committed in a withdrawal:
 - (a) **Mobility.** Withdrawal routes must be cleared and maintained. The main body and rear echelon elements are assisted in breaching unforeseen obstacles and crossing restrictive terrain.
 - (b) **Countermobility.** Demolitions and obstacles are prepared to delay enemy forces near the withdrawing forces.

- (6) **EW.** EW assets will be particularly useful in executing the deception plan, as well as in disrupting enemy command and control communications.

722. **Command and Control.**

- a. **Control.** Control measures of particular importance in the withdrawal are:
 - (1) Liaison elements.
 - (2) Routes/axes.
 - (3) Report/phase lines.
 - (4) Traffic control measures.
 - (5) Check points.
 - (6) Timings as required for critical phases or sequences.
- b. **Morale.** The purpose of the operation must be understood by the whole force in order to maintain morale. During the withdrawal, every opportunity should be taken to improve morale.
- c. **Communications.** Good communications are vital, and the policy for radio and electronic silence must be clearly stated. Communications links, methods of operation and density of communications traffic should remain unchanged for as long as possible to avoid disclosing, to the enemy, the intention to disengage. The creation of radio traffic by forces remaining in contact, will add to the overall deception of the enemy. Elements which have disengaged from the enemy will normally be ordered to keep radio silence.

723. **Combat Service Support.**

- a. **General.** The CSS plan should ensure that the requirements of the withdrawing force are met and that useful materiel, particularly fuel, does not fall into enemy hands. It may take considerable time to evacuate stocks. The supply of ammunition to protective elements and artillery must be guaranteed.
- b. **Planning Considerations.**
 - (1) The enemy must be denied the use of the military equipment and supplies of own forces, other than medical equipment and supplies.
 - (2) Maintenance is to be concentrated on the readiness of materiel required to conduct the operation. Recovery equipment is to be marshalled at critical locations to keep routes open and recover all materiel possible.

- c. **Supply.**
 - (1) Before rearward movement begins, the forward stocks will be reduced by stopping forward supply and, when possible, backloading any unnecessary forward stocks. Mobile distribution points should be established to meet urgent needs and changes in the operational plan.
 - (2) Losses of equipment may exceed normal wastage rates and special arrangements for replacements may have to be made.
- d. **Medical.** Primary concern should be given to the evacuation of casualties. Visible evidence that casualty evacuation is operating effectively will help maintain morale.
- e. **Military Denial of Equipment and Stocks.** This must be coordinated with the timings used in the operational plan, so that tactical security is not prejudiced. The plan should provide for the denial of any equipment or dumps which cannot be backloaded. However, it is not permitted under the Geneva Convention for medical equipment to be destroyed.
- f. **Traffic Control.** To expedite rearward movement military police may be deployed at critical junctions and potential defiles.

SECTION V RELIEF OF TROOPS IN COMBAT

724. **Introduction.** This section states the doctrine for the relief of troops, whereby combat activities are taken over by one force from another. The types of relief operations are defined as:

- a. **Relief in Place.** An operation in which all or part of a force (outgoing force) is replaced in a sector by an incoming unit.
- b. **Forward Passage of Lines.** An operation in which an incoming force attacks through a unit which is in contact with the enemy (outgoing force).
- c. **Rearward Passage of Lines.** An operation when a force effecting a movement to the rear (outgoing force) passes through the sector of a unit (incoming force) occupying a rearward defensive position (incoming force).

725. **Employment Considerations.**

- a. **Concept.**
 - (1) These operations are undertaken when forces:
 - (a) Are unable to continue with their mission.
 - (b) Are required for operations in another area.
 - (c) Have accomplished their mission.
 - (d) Are due for rotation to avoid exhaustion.
 - (e) Are not suitable to accomplish the new task.
 - (2) Generally, relief is undertaken in order to sustain the overall level of combat power. Inherent in these operations is the transfer of operational responsibility for a combat mission. The requirement is that this transfer should take place while maintaining the required level of operational capability.
- b. **Mission.** The mission will be determined by the commander's intentions, the types of operation the committed force has been engaged in, the enemys anticipated course of action and the type of force involved.
- c. **Characteristics.** During any relief operation there is a period when congestion increases the vulnerability of the forces involved. The possibility of confusion is inherent. Two parallel command systems will be operating in one area at the same time.

726. **Conduct of Operations.**a. **Organization.**

- (1) **Relief in Place.** The incoming force normally assumes the mission of the outgoing force, usually within the same boundaries and, at least initially, with a similar disposition of forces, where possible.
- (2) **Forward Passage of Lines.** The incoming force will be organized so that the mission can be carried out after the passage of lines. The outgoing force should adopt a posture which will facilitate the passage and provide the maximum support.
- (3) **Rearward Passage of Lines.** The outgoing force should be organized for disengagement. The incoming force will be organized so that it can carry out its mission as soon as it assumes this responsibility. Additionally, it will ensure the smooth passage of lines of the force moving rearward. For this purpose a handover line will be established, which will have some or all of the following characteristics:
 - (a) The line should be forward of the feature from which the enemy can first engage the next defensive position with observed fire, and be situated so that crossings and defiles used by the outgoing force can be protected.
 - (b) The line should be in an area which can be defended at least temporarily.
 - (c) Good lateral routes should exist behind the handover line to allow the use of alternative entry points.
 - (d) The line location should be easily identifiable on the ground.

b. **Planning.**

- (1) **General.** The following factors must be given special consideration:
 - (a) **Security and Protection.** The intention to conduct a relief must be concealed from the enemy. Deception measures should include the continuation of normal patterns of activity. Additional protection may be required due to the increased vulnerability during such operations.
 - (b) **Early Liaison.** Close cooperation and coordination are required at all levels and at an early stage between the troops in position and those that are moving. As much detailed reconnaissance as the tactical situation allows must be made by an incoming force.
 - (c) **Allocation of Routes for Movement.** Incoming and outgoing forces should, where possible, be allocated separate routes.

- (d) **Allocation of Areas.** This will include the allocation of areas for staging and deployment, including areas for artillery.
 - (e) **Timings.** The detailed timing of the operation will be made within the guidelines set by the overall commander.
 - (f) **Fire Support.** The force in position will always provide fire support for the moving force.
- (2) **Relief in Place.** Attention should be paid to:
- (a) Allowing sufficient time at all levels for a detailed handover of essential information, in particular:
 - (i) The current tactical situation.
 - (ii) The current operation orders and plans.
 - (iii) The organization of the area and location of facilities and routes.
 - (b) The sequence of the relief.
 - (c) The time of transfer of command.
 - (d) Reducing vulnerability by moving at night or in limited visibility.
- (3) **Forward Passage of Lines.**
- (a) It will be normal for the overall commander to designate:
 - (i) Control lines and areas.
 - (ii) The time for the beginning of the attack.
 - (iii) The extent of support for the attack by the outgoing force.
 - (iv) Particular reconnaissance requirements.
 - (v) Command relationships.
 - (b) The plans of the incoming force have priority.
- (4) **Rearward Passage of Lines.**
- (a) The sequence should allow for the early passage by elements not essential to the immediate operation, in order to reduce the density of the force in the position.

- (b) The overall commander will designate:
 - (i) Sufficient routes for the outgoing force.
 - (ii) The handover line.
 - (iii) The location at which the outgoing unit will assemble or redeploy.

c. **Execution.**

(1) **Relief in Place.**

- (a) The relief in place depends essentially on the time available and the local conditions. It can take place simultaneously over the entire width of the sector, or it can be staggered with regard to time and place. If forces are relieved simultaneously over the entire width, a shorter time is required, but the readiness of the defence is considerably reduced and the enemy is more likely to be able to detect the higher level of movement. By contrast, a relief staggered with regard to time and place takes longer, but a larger element of the outgoing forces is combat ready at all times and concealment is easier.
- (b) Combat support troops should not be relieved at the same time as combat troops.
- (c) In general, night and limited visibility will be exploited for the relief, particularly when close to the enemy. If possible, the advance parties of the incoming unit will make a reconnaissance in daylight. If this is not possible or if the incoming unit needs assistance from the outgoing unit to familiarize itself with the local conditions quickly, rear parties of the relieved unit will carry out the orientation.
- (d) Communication links must be maintained, unaltered if possible, for the entire duration of the relief.
- (e) Combat service support troops of the outgoing unit will be sent back as early as practicable. Prepositioned common user bulk supplies and barrier materiel will normally be taken over by the incoming unit.

(2) **Forward Passage of Lines.**

- (a) The incoming force will take advantage of the security provided by the outgoing force to deploy for the attack. The entire movement from the rear through the outgoing force and across the line of departure should be completed as a single fluid movement in order to avoid congestion.
- (b) The indirect fire support elements of the incoming force may be deployed in the outgoing force's area, prior to the arrival of the combat units.

(3) **Rearward Passage of Lines.**

- (a) Before the operation starts, casualties, non-essential vehicles, equipment and supplies should be evacuated early so that routes are kept clear for the movement of the main force.
- (b) The movement across the handover line, where responsibility changes, must be without interruption.
- (c) Protective elements in position must be of sufficient strength to conduct a temporary defence until the rearward passage of lines is completed.
- (d) It may be necessary, during the rearward passage, for elements of the outgoing force to be placed under operational control of the incoming force to deal with a critical situation caused by enemy action.

d. **Employment of Combat Support Forces.**

- (1) **Artillery.** Firing positions of incoming artillery should be sited so that further redeployment is not necessary. They should not be in positions that have already been located by the enemy. In a forward passage of lines, fire support units of the outgoing force should not normally redeploy as long as they can provide support from their positions.
- (2) **Air.**
 - (a) Local air superiority will reduce the vulnerability of the forces during periods when congestion cannot be avoided on the ground.
 - (b) For relief in-place operations there will be situations where CAS could assist the successful completion of operations.
- (3) **Helicopters.** Helicopters may be required to save time in the deployment of liaison and reconnaissance parties. Otherwise they are used in their normal operational role.
- (4) **Engineers.** Whether conducting a forward or rearward passage, the in-place force has the responsibility to provide mobility for the passing unit along cleared routes or corridors through its sector. Creating lanes through the in-place units obstacles requires permission from the force commander who is in command of both the stationery and moving forces. Tasks will include:
 - (a) **Relief in Place.** Assistance with survivability tasks and the takeover of the existing barrier plan.
 - (b) **Forward Passage of Lines.** Opening and maintaining routes, including the crossing of any obstacles.
 - (c) **Rearward Passage of Lines.** The maintenance of routes and counter-mobility

tasks, including the closure of routes and the destruction of crossing points to impede the enemy.

- (5) **Air Defence.** The unavoidable concentration of units during relief operations will increase vulnerability to air attack. This may require the adjustment of the air defence posture.
- (6) **EW.** EW assets will support the deception plan, as well as continuing to provide information on enemy locations.
- (7) **NBC Defence Units.** NBC defence units will monitor units passing to the rear for contamination and conduct decontamination operations to prevent the spread of contamination.

727. **Command and Control.**

a. **Responsibilities.**

- (1) **Relief in Place.** The outgoing commander is responsible for the defence of his sector until command passes. The moment when command is to pass is determined by mutual agreement between the two unit commanders within the overall direction of the superior commander. Both commanders should be collocated throughout the operation. Following the passing of command, the incoming commander will assume the appropriate control of all elements of the outgoing unit which have not yet been relieved. The change of command will be reported to the overall commander.
- (2) **Forward Passage of Lines.** The overall command and control of the operation should be with the superior headquarters of the forces involved. Normally, the commander of the incoming forces assumes responsibility for the conduct of the operation beyond the line of departure at the time the attack begins.
- (3) **Rearward Passage of Lines.**
 - (a) The movement control of elements of the outgoing force will be in accordance with the higher commander's direction and will normally be the responsibility of the incoming force.
 - (b) The actual transfer of responsibility will normally be agreed between the two commanders executing the operation. This can be carried out most effectively if they are collocated. Where appropriate, as the operation progresses lower level commanders may also be collocated.
 - (c) The change of responsibility is reported by the incoming commander.
 - (d) The commander of the outgoing forces will report when the rearward passage of his forces is completed.
 - (e) During rearward passage of lines liaison is to be established from the outgoing

force to the incoming force.

- b. **Coordination.** The higher headquarters directing the operation will stipulate the following details which are especially important in relief operations:
- (1) The time frame in which the operation is to be conducted.
 - (2) Designation of control lines and routes.
 - (3) Arrangement for liaison, reconnaissance and advance parties.
 - (4) Fire support.
 - (5) Tactical air support of land operations.
 - (6) Deception plans.
 - (7) Airspace control means.
 - (8) Air defence.
 - (9) Combat service support including criteria for handover of equipment and combat supplies.
- c. **Communications.**
- (1) In order to conceal the presence of another force from the enemy, the communications plan must support the deception plan.
 - (2) The communications plan should include all those details which the two forces involved will require for coordinated operations. Equipment incompatibility will have to be overcome by the use of liaison teams.

728. **Combat Service Support.** During a relief operation, the stationary force should assist, whenever possible, with casualty evacuation, traffic control, vehicle recovery, fuel and ammunition. A force taking over responsibility for further operations should be fully replenished. The higher commander may direct that the outgoing forces hand over stocks that are not required for their subsequent mission. Stocks must be checked for interoperability prior to any such operations as this may influence the plan. CSS units may have to move early to be in place on arrival of the combat forces. Alternatively, if CSS units are following, plans will have to take account of a reduction or discontinuity in sustainment; in both cases logistic coordination is essential.

SECTION VI CROSSING AND BREACHING OBSTACLES**INTRODUCTION**729. **General.**

- a. An obstacle is a natural or man-made restriction to movement which will normally require special equipment or munitions to overcome it. A coordinated series of obstacles is known as a barrier.
- b. Forces require an ability to cross obstacles in order to continue movement in support of operations. Although crossings normally occur during offensive operations, they may also be necessary during defensive or delaying operations. They can occur throughout the combat zone and along lines of communication further to the rear. Often they involve a passage of lines.

730. **Types of Obstacles and Their Characteristics.**a. **Inland Areas of Water or Waterways.**

- (1) Areas of water are normally obstacles after the destruction of fixed bridges.
- (2) Detours are not normally possible.
- (3) The need for crossing operations can normally be foreseen, from existing geographical data and confirmed by ISTAR assets.
- (4) Assault boats and some other types of vehicles may cross without engineer assistance.
- (5) Crossing difficulty will depend on climatic and terrain conditions.

b. **Minefields.**

- (1) Normally cause attrition.
- (2) Are covered by observation and fire.
- (3) Detours/bypassing may be possible.
- (4) The need for a breach may not be anticipated.
- (5) Normally engineer assistance is required for a breach.

c. **Other Obstacles.**

- (1) Rough, soft or marshy ground, terrain covered by deep snow.
- (2) Craters and ditches.

- (3) Vertical steps and slopes.
- (4) Contaminated areas.
- (5) Abatis, extended wire entanglements, debris, including collateral damage from nuclear weapons.
- (6) Existing and reinforcing obstacles including craters, mines, landfalls and avalanches. Bypass will almost always be difficult or impossible.
- (7) Artificially induced flooding and inundation.

NOTE: In situations where both a crossing and a breaching are required (e.g., integrated river and minefield obstacles) it will be necessary to take note of their individual characteristics. Minor obstacles are crossed and breached by units using their own resources. The crossing of minor obstacles is not considered further in this section but the general principles outlined here are applicable.

731. **Types of Crossing and Breaching.**

- a. **Hasty Crossing/Breaching.** A hasty crossing/breaching takes place from the line of march, with little preparation, using resources immediately available. The intent of conducting such an operation is to execute a crossing before the enemy has the opportunity to prepare his defensive position fully.
- b. **Deliberate Crossing/Breaching.** A deliberate crossing/breaching requires thorough reconnaissance, detailed planning, extensive preparations, rehearsal and heavy or special engineer equipment. It is conducted because of the complexity of the obstacle, or when a hasty crossing/breaching has failed.
- c. **Assault Breaching.** This type of breaching operation provides a force with the mobility it needs to gain a foothold in an enemy defence and exploit success by continuing the assault through the objective. The assault breach allows a force to penetrate an enemy's protective obstacles and destroy the defender comprehensively.
- d. **Covert Breaching.** The covert breach is a special breaching operation used by dismounted forces in conjunction with an infiltration during limited visibility. It is carried out silently to achieve surprise and to minimize casualties.

EMPLOYMENT CONSIDERATIONS

732. **Concept.**

- a. Any obstacle can be overcome given sufficient resources and time. A commander should aim to seize a crossing site or minefield lane or gap intact or conduct a hasty crossing/breaching of the obstacle before the enemy has time to react.

- b. Bypassing an obstacle is often more expeditious, even if forces have to travel greater distances. On the other hand, bypassing an obstacle may comply with the intentions of the enemy.
- c. If obstacles cannot be bypassed, it may be useful to overcome them in places where it is not expected by the enemy. Combined with deception measures, it may thus be possible to surprise the enemy and to avoid losses.
- d. The movement of troops and equipment across the obstacle and their deployment on the far side must be strictly controlled to maintain momentum, avoid congestion, provide flexibility and establish sufficient force to defeat any enemy counter-action.
- e. Limited visibility creates favourable conditions for overcoming obstacles while impeding observed enemy fire. The protective effect of limited visibility may be reduced by modern surveillance and fire control means, while our use of night vision aids allows for use of periods of limited visibility with an advantage; speed, situational awareness and ability to conduct operations may be greatly improved.
- f. If the obstacle is defended, successful breaching must be preceded by the suppression of enemy fire, obscuration of the enemy or screening friendly movement, and securing the breach/ crossing site by either fire or force as necessary.

733. **Planning Factors.** The following factors are applicable to all crossing and breaching operations:

- a. Adequate and timely intelligence and reconnaissance will:
 - (1) Confirm the existence and nature of any obstacles.
 - (2) Assist the commander's decision to bypass or mount a hasty or deliberate operation. From this decision, the requirement for any deployment of engineer equipment and other forces will be established.
- b. Effective movement control measures including timings.
- c. Maximum use of deception to achieve surprise.
- d. Adequate air defence and fire support, particularly tactical air support and counter battery fire.
- e. Adequate NBC defence measures must be undertaken.
- f. Adequate logistics support for clearing/breaching the obstacle.

CONDUCT OF WATER CROSSING OPERATIONS

734. **Planning.** Water Crossing Procedures are covered in detail in STANAG 2395.

- a. **Phases.** A crossing is done in three overlapping phases:

- (1) **Assault.** To gain a lodgement on the far side of the obstacle. This phase is not required for an unopposed crossing.
 - (2) **Build-Up.** To extend the lodgement into a bridgehead.
 - (3) **Consolidation.** To establish a firm base within the bridgehead from which to break out and continue the overall operation.
- b. **Crossing Sites.** If possible crossings should be conducted on a broad front with multiple crossing sites. Areas selected for the crossing of obstacles should have, either naturally or through engineer development, the following features:
- (1) A suitable number of crossing sites, with alternatives, which are dispersed to reduce vulnerability and to provide flexibility. The number of crossing sites established is normally twice that required by the desired traffic flow. This is necessary as time does not normally allow other sites to be started, should the initial ones fail. In addition, the threat may dictate moving to another site.
 - (2) Cover from observation.
 - (3) Routes to and from crossing sites, to include lateral routes which have the required load classification and capacity.
 - (4) Waiting areas.
 - (5) Sufficient space for the establishment of a bridgehead.
 - (6) Locations for elements providing support by direct fire and observed indirect fire.
 - (7) Assembly areas which are located some distance from the obstacle where forces wait to move to the crossing site. The assembly areas need to be dispersed, have good routes to the crossing sites, and good cover and concealment.
- c. **Selection of a Bridgehead.** A bridgehead should have the following characteristics:
- (1) Defensible terrain of sufficient extent that the enemy cannot seriously interfere with the crossing.
 - (2) Sufficient crossing and movement facilities to avoid congestion.
 - (3) A base for the continuation of the overall operation.
- d. **Crossing Area.** The tactical commander - generally the commander of a brigade or higher formation - will order a crossing area only if the tactical situation or the nature of the obstacle requires it. The depth of the crossing area is normally not very great. However, its depth will depend on the size of the obstacle and the terrain. Its near and far boundaries should be positioned within the closest lateral routes approximately 3 km from the water or on easily recognizable terrain features, which run parallel to the obstacle.

- e. **Equipment Reserve.** Selected items of equipment must be held in reserve, ready for short notice replacement or to maintain crossing sites and equipment. Once a crossing is completed, equipment must be recovered for re-use or replaced with permanent equipment as soon as possible.
- f. **Liaison.** The tactical commander must keep the engineer commander informed of his intentions and plans. Thus the engineer commander is able to make his estimate of the situation and advise on the resources available, the number and location of suitable crossing sites, the assistance needed from other elements and the time required for preliminary work. Additionally this allows the crossing area commander and the crossing site commander to operate away from each other in times of reduced communications or changes in the situation or threat.

735. **Execution.**

a. **Offensive.**

(1) **Forces and Tasks.**

- (a) **General.** Normally a force conducting a crossing must pass through an in-place force on the near side of the obstacle. A crossing force consists of a bridgehead force and a breakout force.
 - (i) **In-Place Force.** The in-place force provides fire and other support to the bridgehead force during the crossing. Within its area, it has normal responsibilities regarding security, including defence of the obstacle and the home bank.
 - (ii) **Bridgehead Force.** The bridgehead force consists of an assault echelon and a main body. Its mission is to seize or to control ground in order to permit the continuous embarkation, landing or crossing of troops and materiel. It will also provide the manoeuvre space needed for subsequent operations. The assault echelon is tasked to gain the lodgement, normally seizing intermediate objectives. This prevents enemy ground observation and direct fire onto the obstacle, so that crossing sites and equipment can be prepared and operated to bring the main body and breakout force to the far side with minimum interference. The main body of the bridgehead force conducts the build-up, including the seizure of the objectives on the bridgehead line, and consolidation. Within its area, the bridgehead force has normal responsibilities for security, including the defence of the far side of the obstacle.
 - (iii) **Breakout Force.** The breakout force is tasked with the continuation of the operation. In some situations this may be an additional task for the bridgehead force.

(2) **Assault Phase.**

- (a) The assault echelon establishes a lodgement on the far side of the obstacle to eliminate enemy direct fire and observation of the crossing sites. The lodgement is achieved either by:
 - (i) Infiltration.
 - (ii) Boating, swimming, fording or snorkelling a force
 - (iii) Air lifting.
- (b) At H-hour, the assault echelon crosses the line of departure, which is normally the near bank, and proceeds across the obstacle. Fire and other support is provided by elements of the in-place force on the near side of the obstacle. Normally this support includes direct and indirect fire support and the protection of crossing sites from air attack and from attacks along the obstacle by divers, sabotage squads, vessels, mines or drifting objects.

(3) **Build-Up Phase.**

- (a) Once the assault echelon is across the obstacle and secure on the objectives, the tactical commander orders the crossing area into effect. Engineers complete their preparation of crossing sites and means, and movement control elements complete their deployment and control the move of the main body across the obstacle, in accordance with the crossing plan.
 - (b) The crossing area organization must be flexible as, once a crossing site is detected by the enemy, it is extremely vulnerable. Equipment, such as bridging, may have to be dispersed at short notice and alternative means and sites may have to be used. In some cases, it may be necessary to split a bridge into rafts, or alternatively, use smoke to obscure the site.
 - (c) Once across the obstacle, the lead elements of the main body pass through or around the assault echelon and carry on to secure the final objectives in the bridgehead. Once these have been secured, the bridgehead is established.
- (4) **Consolidation Phase.** This phase is an extension of the build-up phase. Enemy pockets of resistance are eliminated and the remainder of the main body and assault elements of the breakout force are moved across the obstacle. Crossing sites are improved and preparations are made for the breakout and the continuation of the overall operation which must be resumed as quickly as possible.

b. **Delaying Operation.** The phases of a delaying operation crossing follow this general pattern.

- (1) **Relief Phase/Relief Operation.** Units not required to support the battle should be withdrawn over the crossing as early as possible. Maximum use should be made during this phase of existing bridges (if these are available) as directed by the tactical

commander. Bridges or ferries may be ordered as part of the withdrawal plan.

- (2) **Delaying Phase/Delaying Combat.** This represents the assault phase in reverse. The forces engaged on the enemy bank are withdrawn under cover of supporting fire from armoured and infantry elements on the home bank. This phase would be coordinated by the tactical Commander. The rate of crossing is dependent on the pressure from the enemy: the commander may risk employing all the crossing means available concentrating on those bridges which are best concealed. By the end of this phase all bridges should if possible have been withdrawn or dismantled, or destroyed.
- (3) **Withdrawal Phase.** During this phase obstacles to movement on either side of the crossing are improved or activated. The last vehicles are withdrawn by ferries or on pontoons, or by swimming or snorkelling (if the river bed and banks are suitable). These are protected by an infantry screen supported by artillery and mortars. The last troops are transported by boat, helicopter or any available means.

736. **Employment of Combat Support Forces.**

- a. **Artillery Support.** Artillery and mortars are usually positioned so that they can provide continuous support during all phases of a crossing. The primary task of both of these weapons is to provide supporting fire to troops in the bridgehead. They should also mask enemy observation of the crossing sites and employ counter battery fire to neutralize enemy forces defending the obstacle. Deception fire can also be used in order to draw the enemy's attention away from the actual crossing site.
- b. **Air.** As it may be possible to achieve only local air superiority for a limited period, the time and location of the crossing must be carefully coordinated with air support.
- c. **Helicopters.** Helicopter forces could have much to contribute to obstacle crossing and both AH and other helicopters can be used to secure the approach to the obstacle during the assault phase. AH also provide the commander with additional and flexible fire support.
- d. **Air Defence.** Forces conducting a crossing present a particularly attractive target to the enemy. Although each force is responsible for its own air defence, special arrangements may be made for the actual crossing sites and the routes to them because of their importance.
- e. **Engineer Support.** Nearly all crossings require engineer support. The main task of the engineers is to enable the bridgehead force to cross the obstacle. As a secondary task, they may be required to prepare obstacles to protect the flanks of the crossing force. Usually most personnel and equipment committed to both of these tasks are drawn from forces not involved in the crossing or subsequent operations as these forces require their own engineers for the assault and tasks in and beyond the bridgehead. Operations may be restricted by the amount of specialized crossing equipment available. Additionally, engineers are required to support following forces.
- f. **EW.** EW support to crossing operations will be based initially on passive measures to aid intelligence gathering. Electronic deception and jamming may be used to support the main

operation.

737. **Combat Service Support.**

- a. **Replenishment.** The assault echelon commander should ensure that his force is self sufficient in combat supplies, as during the assault phase, his force will be temporarily separated from its full combat service support. Provision should be made for emergency replenishment, possibly by helicopter. Within the crossing plan, it is important that ammunition and fuel replenishment vehicles cross early to ensure timely replenishment.
- b. **Repair and Recovery.** Repair and recovery resources must be included in the movement control plan to ensure that routes, particularly at defiles and crossing sites are kept open. Resources should be positioned on both sides of crossing sites. Special consideration must be given to the arrangements for the repair and recovery of vehicles in the process of crossing the obstacle.
- c. **Medical.** The movement control plan must include medical arrangements particularly for the evacuation of casualties. Medical facilities with casualty evacuation assets should be established each side of the water obstacle crossing and there may be a need to deploy a medical holding facility on the other side of the obstacle. Helicopters are particularly useful in this situation.
- d. **Provost.** Traffic control will be vital at crossing points and defiles to prevent congestion with vehicles becoming static and exposed.

738. **Command and Control.**

- a. The need for a clear command organization, which plans and executes a complete but simple crossing plan, is paramount in all water crossing operations. The controlling headquarters must provide a flexible organization and make the best use of the resources available to react to any changes in the crossing flow and the tactical situation.
- b. The basic requirements for control are:
 - (1) A crossing control organization with clearly defined responsibilities.
 - (2) A movement control organization.
 - (3) A command and control communications network.

739. **The Commander.** The commander has overall responsibility for command and control of the crossing operation and will issue the Crossing Plan:

- a. In the rear areas, the commander may be a national territorial area commander, not part of the NATO command chain. In operating the movement control net, he exercises control for the movement of deploying formations based on priorities.
- b. In the Forward Combat Zone (FCZ), the commander is normally the overall tactical commander. His task is to guarantee the movement of any unit/formation in or through his area of

responsibility. He will exercise at least operational control for this particular operation.

740. **Direction.** The commander may select, determine and allocate:

- a. Crossing areas.
- b. Crossing sites.
- c. Assembly and waiting areas.
- d. Deployment routes.

He may also issue special instructions for crossing and times and, if necessary, the organization of convoys.

741. **Controlling Headquarters.**

- a. The commander for a major crossing operation may form a special controlling headquarters, at which the following elements will be represented:
 - (1) Movement control.
 - (2) Engineers.
- b. It may also be necessary to have the following represented:
 - (1) Logistics.
 - (2) Communications and EW.
 - (3) Liaison elements from crossing formation/units.
- c. For major crossings a Crossing Area HQ and several Crossing Site HQs may be required. See Fig 7.1.

742. **Engineer Commander.** Each level of command in a water crossing operation will have an engineer who is responsible for the technical aspects of executing the crossing.

743. **Engineer Responsibilities.** Engineer commanders are responsible at their respective levels of command for:

- a. Giving advice on all engineer matters.
- b. Ensuring that there is an adequate communications network for engineers involved in the operation.
- c. Assigning crossing site commanders.

744. **Crossing Site Commander/HQ.** The Crossing Site Commander is normally an Engineer appointed by the appropriate level of command. He will normally provide the crossing site HQ. He has the following responsibilities:

- a. To develop and maintain the crossing site including entrances and exits.
- b. To construct, operate and maintain the means of crossing.
- c. Movement across the water at his crossing site including the giving of orders to troops during the crossing.
- d. Advice to the Waiting Area Controller on movement to his crossing site.
- e. All technical aspects of maintaining the survivability of his crossing site and crossing equipment.

745. **Crossing Formations/Units.** When a force is required to conduct a move which is controlled and supported by another authority (Command or Nation) it is mandatory for this force to liaise as early as possible at its respective level of command within that authority. The purpose of this liaison is to exchange relevant documents and to be briefed on:

- a. The movement control organization.
- b. Organization and procedures of any water crossings.
- c. Reporting details for movement and for water crossings.
- d. Status of convoy commanders and drivers of isolated vehicles.

746. **Crossing Plan.** The crossing plan should include the following items:

- a. Tactical situation.
- b. Commander's intentions, special directives and any arrangements for delegating control.
- c. Protection, security, reaction to enemy attacks and instructions for denying the crossing.
- d. Designation of crossing sites, alternative crossing sites and routes leading to and from them.
- e. The grouping and tasks for the engineers.
- f. The boundaries of the crossing area.
- g. The movement control plan to include routes to and from the obstacle, lateral routes, movement control posts and waiting areas.
- h. A crossing schedule that provides a timetable for the crossing as well as:
 - (1) Movement credits per unit.
 - (2) Priorities for the crossing.

- i. Any limitations such as the capacity, speed and Military Load Class (MLC).
- j. Nicknames for each crossing site.

A schematic diagram of a Divisional Crossing Plan is at Figure 7-1.

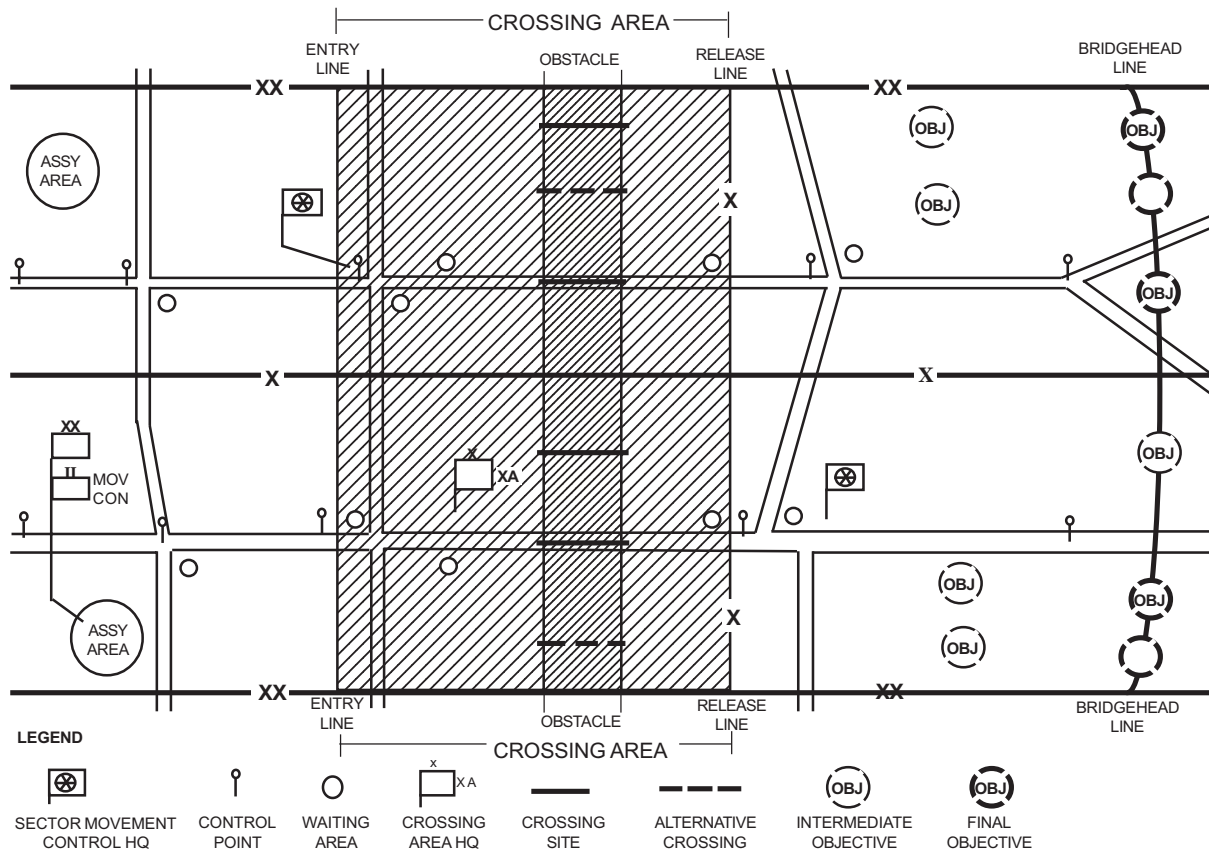


Figure 7-1. A schematic diagram of a Divisional Crossing Plan

NOTES:

1. The tactical commander will normally be at the crossing control organization HQ with which the Movement Control HQ will be collocated. This is represented by the Divisional HQ.
2. He may deploy forward to the Crossing Area HQ.
3. Crossing Site HQs are not shown.

CONDUCT OF BREACHING OPERATIONS

747. Planning.

- a. Seizure of minefield lanes intact or an opportunity for a hasty breaching must be exploited. If this fails a deliberate breaching will be necessary.

- b. For breaching to have a reasonable chance of success the minimum information required is the minefield depth, its front and rear edges and details of enemy weapons covering the minefield.
- c. The aim must always be to breach paths and lanes through enemy minefields from the very beginning in order to enable dismounted infantry and combat vehicles to cross the barrier. Whether paths may be prepared in advance will depend on the situation, terrain, type of barrier and breaching equipment available. Paths are to be enlarged rapidly to form lanes. As many lanes as possible should be breached.

748. **Execution.**

- a. For enemy obstacles, reconnaissance should include, if possible, the breaching of a patrol path or lane through the minefield.
- b. If the enemy situation allows, dismounted troops cross the minefield and establish a lodgement on the far side, although this may not always be possible. In either case, it is necessary to form a breaching force to open lanes for personnel and vehicles of the assault echelon.
- c. If the minefield has been prepared by friendly forces, it is crossed using existing gaps or lanes, or newly breached lanes.
- d. Once lanes are open, traffic control posts both ends of the lanes are required. In addition, recovery posts will be established at the approaches to all lanes and, occasionally, on both sides of the minefield.
- e. With the assault echelon across the minefield and secure, engineers complete their preparation of breaching sites to include marking. Movement control elements complete their deployment to control the movement of the main body across the minefield. Complete clearance of barriers requires a considerable amount of time and resources. Therefore usually it can be justified only if operationally necessary.

749. **Combat Service Support.** Similar considerations to those required for water crossings apply. The scale of support for breaching operations tends to be lower than that for water crossing.

750. **Command and Control.** The level of command is likely to be lower than for water crossing. Minefield breaching may involve a number of independent simultaneous actions each with its own commander, whereas water crossing is a centralized operation. The breaching commander is the commander who has the tactical responsibility for operations in that area.

CONDUCT OF OTHER OBSTACLE CROSSINGS

751. **Considerations.** The considerations which apply to the conduct of other obstacle crossings are the same as those for water crossing operations and minefield breaching. The major difference is normally one of scale. Therefore, the crossing of other types of obstacles is conducted at lower tactical levels. Nevertheless, the tactical commander must ensure the appropriate engineer support is available to maintain his mobility.

CHAPTER 8
Airmobile Operations

R

SECTION I INTRODUCTION

801. **General.**

- a. The purpose of this chapter is to outline the doctrine and general procedures used in airmobile operations. The subject of airmobile operations is covered in detail in ATP-49.
- b. An airmobile operation is “an operation in which combat forces and their equipment manoeuvre about the battlefield by aircraft, to engage in ground combat” (AAP-6). Air mobility provides an additional dimension for ground forces.
- c. Airmobile operations should not be confused with air movement which is the transportation by air of troops, supplies and equipment from one location to another and does not necessarily imply tactical integrity to engage in immediate combat.
- d. For a helicopter borne assault conducted as a part of an amphibious operation see Chapter 10.

SECTION II EMPLOYMENT CONSIDERATIONS802. **Concept.**

- a. Airmobile operations are an integral part of the land battle and are dependent on sound and up to date intelligence. Airmobile forces may operate in conjunction with other ground forces, or independently. Indeed the very threat of an airmobile force may cause the enemy to dissipate his strength by protecting vital installations and key terrain in rear areas, which would otherwise be inaccessible to the attack of friendly ground forces.
- b. Airmobile forces enable commanders to react quickly over the entire width and depth of their combat sectors, thus assisting them to wrest the initiative from the enemy and gain freedom of action. They are suitable for the role of a highly mobile reserve.
- c. The operations are usually executed in undefended or lightly defended areas, however, in exceptional cases they may be conducted in areas occupied by well-organized enemy combat forces, provided that adequate resources are available for suppression.

803. **Mission.** Airmobile operations may be conducted during all types of ground operations. Their purpose may be:

- a. The seizure and retention of key terrain including defiles, bridges and crossing sites.
- b. Overcoming obstacles.
- c. To conduct raids.
- d. To engage or destroy air delivered enemy forces and guerrilla forces.
- e. To exploit the effects of nuclear weapons.
- f. Reconnaissance missions.
- g. Security missions, such as providing a screen on possible enemy approaches or as a rear area security force.
- h. To support deception operations.
- i. To block, or assist containment of, enemy penetrations.
- j. Reinforcement of encircled forces.
- k. To insert or extract long-range patrols.

804. **Capabilities.** An airmobile force is capable of:

- a. Attacking from any direction, striking objectives in otherwise inaccessible areas, overflying barriers, and bypassing enemy positions, to achieve surprise.

- b. Rapidly deploying and redeploying, permitting quick concentration of combat power at key locations. Similarly, they are capable of rapid dispersal to reduce vulnerability.
- c. Giving the commander the ability to reinforce or relieve his forces quickly and over long distances.
- d. Enabling the force commander, under certain circumstances, to commit a larger part of his force while relying on a small airmobile reserve.
- e. Conducting operations independent of a ground line of communication.

805. **Limitations.** Airmobile operations may be limited by the following factors.

- a. Weather conditions.
- b. Vulnerability to enemy fire and the effects of NBC weapons, particularly between assembly and take-off and after landing.
- c. Vulnerability during air movement, to enemy air defence, including aircraft.
- d. Local air superiority in the objective area.
- e. Inadequate suppression of enemy ground fire and air defence weapons, including the related command and control systems along the flight route.
- f. Type and quantity of supporting weapons and other heavy equipment, including vehicles, that can be airlifted.
- g. Difficulty in maintaining flow of supply, including the need for early link-up by ground forces or safe air resupply.

SECTION III CONDUCT OF OPERATIONS

806. **Organisation.** Airmobile forces may be organized in any one of three ways:

- a. A formation which has organic aircraft in sufficient quantity to enable it to undertake airmobile operations without requiring the assistance of additional aviation forces. This is an airmobile formation.
- b. A formation which has insufficient organic aviation forces and thus requires reinforcement. Some joint and combined training may be required with these newly allotted aviation forces to make the formation truly airmobile.
- c. A formation which has no organic aviation forces and which must have the necessary forces allotted to it before it can undertake airmobile operations. A major consideration in this case is the requirement for joint and combined training before the commitment of the force.

807. **Planning.** An airmobile operation is planned in the reverse order of execution. The reverse planning sequence consists of:

- a. **The Ground Tactical Plan.** The ground tactical plan covers the employment of the assault force and support units once they have landed on or near the objective.
- b. **The Landing Plan.** The landing plan covers the introduction of the airmobile force into the objective area at the right time and place and in the proper sequence to execute the ground tactical plan.
- c. **The Air Movement Plan.** The air movement plan consists of the flight route and the air movement table. It also includes information concerning the flight formation, altitudes and speeds, weather, fuel, maximum load capacity, radius of action and procedures for airspace control, air defence and tactical air support.
- d. **The Loading Plan.** The loading plan identifies the pick-up zone, provides guidance for its establishment and control, lays down the priority of landing and states the order of movement of troops, supplies and equipment to the pick-up zone which is used as a base for troop briefing.
- e. **The Staging Plan.** The staging plan details the control area(s) and provides guidance on major repositioning of the units, supplies, and equipment required, prior to the execution of a large-scale airmobile operation.

808. **Execution.**

- a. **General.** The operation is conducted by ground forces, normally delivered by helicopters. Because of the restrictions in the lift capability and the numbers of helicopters available, the ground forces will have at their disposal only a limited number of ground vehicles, particularly armoured ones. Where available, the operation should be supported by armed helicopters. Other types of helicopters may assist the ground forces once they have landed, particularly with reconnaissance, transportation and combat service support.

- b. **Sequence.** The sequence of events in an assault by an airmobile force is normally:
- (1) Reconnaissance of the route and landing zone area.
 - (2) Pre-assault neutralization of enemy in the area of the flight corridor and landing zone by EW, air strikes, deep air assault, artillery or possibly naval gunfire. A favourable air situation is required.
 - (3) While the enemy is suppressed and prevented from interfering with the operation, combat troops are moved to the objective, or to a point as near to the objective as possible, by an assault echelon of helicopters.
 - (4) The objective is captured and/or occupied by combat forces.

809. **Employment of Combat Support Forces.**

- a. **Artillery.** When airmobile forces are deployed close to friendly forces, they will be supported by fire support assets which are within range. Operations over a greater distance may require artillery to be repositioned or to accompany the airmobile force into the objective area. Sufficient forward observers must be allocated. Naval gunfire support should always be considered, if available, when planning support to airmobile operations.
- b. **Air.** CAS can, to a certain extent, compensate for artillery support if this is reduced because of distance and lift capabilities.
- c. **Helicopters.** The helicopters required for airmobile operations, if not organic to the airmobile force, must be allocated from other resources, either for the entire duration of the operation or for specific phases.
- d. **Air Defence.** Air defence resources are normally deployed with the lead elements.
- e. **Engineer.** The airmobile force commander ensures that engineer effort is integrated into the scheme of manoeuvre and fire support plan in the defence. Engineer assets are placed well forward in the scheme of manoeuvre to assist in the mobility of manoeuvre forces in the attack and countermobility in the defence. Substantial field fortifications will be required to protect the force and to allow anti-tank weapons to be used to maximum effect.
- f. **EW.** Intelligence gathering will be vital during all stages of the operation, and jamming will be of specific importance during the air movement and landing phases. EW support can be achieved by the use of:
 - (1) Low level support team(s) which may accompany lead assault elements.
 - (2) Manpack and heliborne EW equipment which may be used during the initial phase of the operation.
 - (3) Airborne EW support which may be provided from airborne assets operating in a stand-off mode or accompanying the air assault force. In particular, this can be directed towards Suppression of Enemy Air Defence (SEAD).

SECTION IV COMMAND AND CONTROL**810. Responsibilities.**

- a. **Airmobile Force Commander.** The force commander is a ground force commander who is charged with the overall responsibility for planning and executing the operation. His responsibilities include:
 - (1) Preparation of all plans and orders.
 - (2) Control of both aviation and ground elements.
 - (3) Tactical decisions affecting the force as a whole during the operation.
 - (4) Establishing replenishment priorities.
 - (5) Security for aviation units while on the ground in his area.
 - (6) Ensuring that coordination and liaison is established with air defence, airspace control and tactical air support elements.
- b. **Helicopter/Aviation Mission Controller.** He is subordinate to and advises the airmobile force commander. His responsibilities include:
 - (1) Control of helicopter elements.
 - (2) Ensuring that liaison is established with the lifted units.
 - (3) Assisting in the preparation of the force plans and orders.
 - (4) Providing technical information.
 - (5) Coordinating pathfinder operations.
 - (6) Coordinating logistic requirements for the air element with the airmobile force commander.
- c. **Lifted Unit Commander.** He is a ground unit commander and subordinate to the airmobile force commander. Normally he does not control supporting helicopter/aviation elements, but, at the discretion of the airmobile force commander, control may be delegated to him for certain phases of an operation.
- d. **Helicopter/Aviation Unit Commander.** He commands the helicopter/aviation unit(s) and is subordinate to the helicopter/aviation mission controller.

811. Relationships. The relationships between the various commanders are shown in figure 8-1.

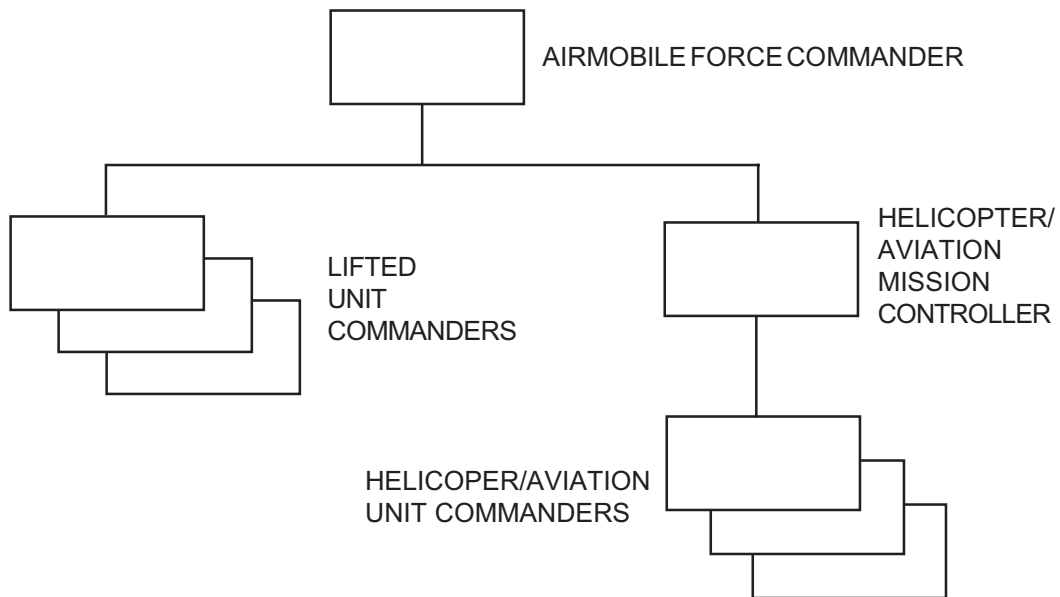


Figure 8-1: Command Relationships

812. **Coordination and Communications.**a. **Coordination.**

- (1) **Ground Units.** The following points apply:
 - (a) When the operation is conducted within the zone of action or in the vicinity of friendly forces, the respective missions of the ground units and of the airmobile force must be well defined, and their actions coordinated to ensure safety of ground and helicopter forces. This coordination consists mainly of the exchange of information, intelligence, the drawing up of fire support plans, the delineation of fire control measures, and reconnaissance procedures. To assist with this coordination, a liaison officer from the airmobile force should be provided to the ground operating force.
 - (b) When the operation is not conducted in the vicinity of other friendly forces, coordination may be required between forces that have landed in different places. In this case clear command relationships must be established.
- (2) **Airspace Control.** Liaison and coordination with the appropriate airspace control element is necessary to ensure coordination of airspace users. Procedures for airspace control in the combat zone will be found in ATP-40.
- (3) Air support may be essential during an airmobile operation. It may consist of counter air operations, ASFAO and supporting air operations. The FSCL is a very important coordination measure in airmobile operations, as is the allocation of sufficient forward air controllers (FACs).

- b. **Communications.** The communications system must ensure a dependable link between the headquarters of the force commander and the forces operating in isolation. When an airmobile operation command post is located in an aircraft, facilities are generally very limited.

SECTION V COMBAT SERVICE SUPPORT

813. **General.** Airmobile operations produce a number of CSS support problems:

- a. The consumption rate of key combat supplies is likely to be high both for ground units and for aircraft operating from the objective area.
- b. Surface resupply will often not be possible in offensive actions.
- c. The air lift capacity available will be limited. Any initial lift allocated to the transportation of supplies will reduce the amount of combat support resources that can be moved to the objective area.
- d. Air supply is subject to interruption due to enemy activity or inclement weather.
- e. Units in the objective area will have limited ability to move or distribute supplies.
- f. Elements of unit medical aid posts and second line (role 2) medical units must deploy with the initial or early lifts.

814. **Planning.** Major planning considerations are:

- a. Commanders at every level must appreciate the importance of conserving lift capability. Combat, combat support and CSS elements must accept that the operation will be launched and maintained on austere scales with only essential equipment, supplies and personnel being moved into the objective area.
- b. Plans for CSS must be developed and adjusted in conjunction with the operational plan. An airmobile flexibly packaged combat supplies reserve should be maintained.
- c. The airmobile force commander must have the authority and capability to phase the conduct of CSS operations, to adjust priorities of delivery and to determine the location to which supplies are delivered.
- d. Stocks may need to be positioned well forward in order to reduce aircraft fuel expenditure and turn around time.
- e. Planning must cater for the requirements both of the ground units and of aircraft operating in the objective area.
- f. Returning aircraft should be used to supplement the normal medical evacuation effort.

CHAPTER 9

Airborne Operations

SECTION 1 INTRODUCTION

901. **General.**

- a. This chapter gives the doctrine and general procedures used to conduct airborne operations. The term airborne refers to air drop or air landing operations from fixed wing aircraft and should not be confused with airmobile ones where forces are deployed by helicopter.
- b. An airborne operation is a joint operation involving the air movement of ground forces into an objective area. The means employed may be any combination of airborne or air transportable units, the type of transport aircraft used depending upon the mission and the situation. The combat forces may be self supporting for short-term operations, or the operations may call for additional combat support and combat service support units.
- c. An air move of personnel, supplies or equipment which is not in an objective area is not an airborne operation, although some procedures used in airborne operations may be applicable.

SECTION II EMPLOYMENT CONSIDERATIONS902. **Concept.**

- a. Airborne forces are specifically organized, equipped and trained for delivery by airdrop or air-landing into an area to seize objectives or conduct special operations.
- b. The success of airborne operations depends on strict security to obtain surprise. They may be initiated, either independently or in conjunction with the forces operating on the ground, in order to prepare, expedite, supplement, or extend their action.
- c. Airborne operations are only feasible under conditions of local air superiority.
- d. Airborne forces give a commander flexibility within the theatre and permit him to extend the area of operation. The threat of their use will cause an enemy to earmark forces to counter the threat.
- e. Intelligence on enemy Orders of Battle, dispositions and intentions in the DZ or LZ or sufficiently near to influence operations are of the utmost importance for airborne operations.

903. **Mission.**

- a. **Types of Operation.** Three types of operations are undertaken by airborne forces:
 - (1) **Seize and Hold Operations.** Airborne forces may be required to seize and hold objectives until either reinforced or relieved by other forces.
 - (2) **Area Interdiction Operations.** These operations aim at preventing or hindering enemy operations in a specific area. Terrain which is heavily wooded, hilly or dominated by a river or other obstacles, and which hinders the enemys off-road mobility, is best suited to this type of operations.
 - (3) **Airborne Raids.** The airborne raid is a tactical or strategic operation, normally of short duration, which is characterized by boldness of concept and execution. Raids may be conducted to destroy enemy installations or positions, to capture enemy personnel, or to harass or disrupt enemy operations. Because of difficulties of control and logistic support, such operations are usually limited in size.
- b. **Tasks.** Airborne forces may be used to:
 - (1) Collect information in enemy controlled territory.
 - (2) Conduct raids on headquarters, fire support positions, lines of communications, administrative and logistic installations.
 - (3) Seize and retain key terrain until link-up with ground forces.
 - (4) Reinforce encircled ground forces.

- (5) Conduct an attack on the rear of the enemy positions or to cut off his reserves in combination with offensive action by other ground forces.
- (6) Cover a flank or a possible enemy approach.
- (7) Create a sense of insecurity in the enemy's rear areas.

904. **Characteristics.** Airborne operations have the following characteristics:

- a. Ground mobility is limited. This can be improved by vehicles, which may be included as part of the heavy equipment drop, or by the use of helicopters.
- b. Because the force normally has little or no armour and a limited number of vehicles at its disposal, particularly in the initial landing phase, terrain exploitation is vital.
- c. The duration of the operation is limited in time. Relief or reinforcement by other forces or the extrication of the landing force is required.
- d. Because organic fire support is limited, close air support gains a specific importance.
- e. There will be a need for large numbers of man-portable anti-armour weapons.

905. **Capabilities.** Airborne forces have the following capabilities:

- a. **Mobility in Deployment.** In moving to the objective they may be deployed quickly and over considerable distances, crossing difficult terrain and obstacles.
- b. **Advantage of Surprise.** They have the ability to achieve surprise, particularly as their area of operations cannot be easily predicted by the enemy. Even when launched the mission of the force may not be immediately apparent to the enemy.

906. **Limitations.** An airborne operation may be limited by:

- a. **The Ability of Aircraft to Reach their Destination.** They may be restricted by unfavourable weather conditions. For large-scale airborne operations local air superiority is essential during the entire period of the operation. In addition, enemy ground based air defence systems must be neutralized or suppressed:
 - (1) On the approaches to and return from the drop/landing zone.
 - (2) In the area of the drop/landing zone itself.
- b. **Vulnerability.** After landing, airborne forces have limited mobility, organic firepower and combat support and they require time to organize and reach full combat effectiveness. This applies particularly to defensive tasks and for protection against the effects of NBC weapons. Anti Surface Force Air Operations (ASFAO) can help to offset weaknesses if provided in sufficient strength on a timely basis throughout the operation.
- c. **Sustainability.** Reinforcement, redeployment or extraction of the force may be considerably more difficult than with other ground forces. Any resupply by air is subject to the threat of disruption.

SECTION III CONDUCT OF OPERATIONS

907. **Organization.** The organization and composition of an airborne force depends to a large extent on the air transport capacity and the task to be undertaken. Once the organization is decided and the operation has been launched the commander has very limited flexibility.

908. **Planning.**

- a. **General.** Planning for an airborne operation is best carried out in the reverse order of execution.
 - (1) **The Ground Tactical Plan.** The ground tactical plan details missions and objectives and sets out the type, strength and organization of combat forces and support required to accomplish the assigned mission. For most operations it also designates the area of operations, other reconnaissance and security forces, boundaries, and provides for a reserve.
 - (2) **The Landing Plan.** The landing plan, in conjunction with the ground tactical plan, indicates the sequence, the method of delivery, locations of drop/landing zones and the assembling of the different components of the airborne force and materiel in the objective area.
 - (3) **The Air Movement Plan.** The air movement plan, in conjunction with the landing plan, includes detailed information concerning the air movement of all airborne forces from the departure airfields to the drop/landing zones.
 - (4) **The Loading Plan.** The loading plan is based on the likely requirements in the landing plan and establishes the priority of loading.
 - (5) **The Marshalling Plan.** The marshalling plan is based on the requirements of the air movement plan. It deals with the problems of dispersion of the airborne forces in the area of the departure airfields and also covers the briefing and preparation of the units for the forthcoming operation.
- b. **Intelligence.** Accurate intelligence on the enemy in the landing zones is crucial and influences planning. The flow of information and intelligence must continue until the last possible moment in order to allow for the adjustment of plans.

909. **Execution.**

- a. **Phases.** An airborne operation generally falls into four inter-related phases.
 - (1) **Mounting.** This includes all activities from receipt of the warning order or planning directive until loaded aircraft take-off on the mission. During this phase, joint planning is completed, intelligence is analyzed, stringent security measures are maintained, troops, equipment and supplies are assembled and marshalled, aircraft are loaded.

- (2) **Air Movement.** This phase begins with the take-off of loaded aircraft from departure areas and ends with the delivery of units to their drop/landing zones.
- (3) **Assault.** This begins with the assault landing of units on their drop/landing zones, and continues through from the assembly of the force to its reorganization on the objective.
- (4) **Subsequent Operations.** By the very nature of airborne operations, the initiative is seized. The force should seek to maintain this advantage while operating in enemy territory although any subsequent operations must be in accordance with the commander's overall plan.

b. **Conduct of Operations.**

- (1) **Seize and Hold Operations.** There are two phases:
 - (a) An offensive phase, which ends with the capture of the assigned objectives.
 - (b) A defensive phase, which aims to hold the secured objectives until reinforcement by, or link-up with, other forces.
- (2) **Area Interdiction Operations.** These may take various forms, such as denial of an area or interruption of enemy lines of communication. Whether they are conducted by numerous harassing actions carried out by isolated groups or by the concentration of forces at a particular point, the success of the operation depends on commanders using imagination and taking calculated risks. Only the minimum of essential equipment should accompany the force. Whenever possible, the force should receive fire support from the air, sea, or other ground units. Whereas seize and hold operations always imply a link-up, an area interdiction operation may also be terminated by the withdrawal or extraction of the force.
- (3) **Airborne Raids.** These are conducted in two phases:
 - (a) The assault, which may be preceded by preparatory fire, and which ends when the mission has been accomplished.
 - (b) The withdrawal of the troops from the area, which may be accomplished by exfiltration out or extraction by air or sea.

910. **Employment of Combat Support Forces.**

- a. **Artillery.** The airlift capacity will generally limit the amount of integral indirect fire weapon support available to an airborne force. In certain circumstances, fire support can be provided to an airborne force by naval gunfire or long-range artillery. It is essential that fire control parties for these means are attached to the airborne force. Naval gunfire support should always be considered if available when planning support to airborne operations.
- b. **Air.** Where indirect fire cannot support an airborne operation, fire support will have to be provided either by CAS or, sometimes, armed/attack helicopters.

- c. **Helicopters.** Integral helicopter support can be provided only if the area occupied is of sufficient size or within range of helicopter support from another force. When this is the case, helicopters and airmobile elements may be used at any time for reconnaissance, fire support, command and control and combat service support.
- d. **Air Defence.** Airborne units and the resupply activities connected with their sustainment, are particularly vulnerable to air attack. Adequate air defence elements must, therefore, be included in the task organizations depending upon the state of friendly air superiority in the area. Air defence resources should be deployed with the leading elements.
- e. **Engineer.** All airborne operations will need assistance on mobility and counter mobility tasks. The organization of engineer support will depend upon the mission and the anticipated sequence of tasks to be carried out. In seize and hold operations on a larger scale there may also be a requirement to construct landing sites.
- f. **EW.** EW units will be able to assist in airborne operations by deceiving the enemy, SEAD, isolating the objective, and degrading the enemy's ability to react. EW support by ground units, necessarily limited by transportation constraints, will have to be complemented, as required, by EW missions carried out by army airborne systems and/or by the airforce.

SECTION IV COMMAND AND CONTROL911. **Responsibilities.**

- a. In airborne operations unity of command is essential and, because of their joint nature, planning must be centralized. However, during the execution of operations, particularly in the early stages of the ground assault, freedom of action is vital for lower echelons.
- b. A Joint Airborne Task Force may be established for the preparation and conduct of an airborne operation involving large formations.

912. **Command Relationships.** During the air movement phase, command responsibility for both the air force and land force elements rests with the commander of the air movement unit. It must be clearly established who can make the final decision on whether to go or not, whether to change landing or drop zones, or whether to abort the operation. If a link-up operation follows an airborne operation, command responsibilities have to be planned for and established as soon as possible. Normally, command responsibility will develop to the senior ground commander in whose area of responsibility the airborne force is operating.

913. **Coordination and Communications.**

- a. **Coordination.** Continuous cooperation at all levels is essential. The need for the exchange of liaison officers extends through all levels of command of participating services.
- b. **Communications.** Once an airborne force has landed, it will have to rely mainly on manpack radio. Airborne radio rebroadcast may play an essential part in providing communications with the main force.

SECTION V COMBAT SERVICE SUPPORT

914. **Planning.** It is essential that the supply needs of the force, including the build up of reserve stocks, are calculated generously to cater for the risks and contingencies of this type of operation. The force will usually have an integrated CSS element. Resupply will be scheduled for delivery in accordance with the plan of the force commander and as the situation develops the schedule may be adjusted by the supported commander to meet his requirements.

915. **Supply.**

- a. **Accompanying Supplies.** Accompanying supplies are those taken into the airhead by the force. They are issued before marshalling to allow for their early preparation for air movement and delivery during the assault.
- b. **Follow-up Supply.** The follow-up supply is in two parts:
 - (1) Resupply is delivered automatically in the objective area according to a preplanned timing. It is based on an estimated daily expenditure of all classes of supply and may be delivered to recipient units or to a central location.
 - (2) On-call, follow-up supplies to satisfy emergency requirements of selected items.
- c. **Routine Supply.** Routine supplies delivered as a result of normal requisitioning procedures.

916. **Medical.** There may be a requirement to augment organic unit aid stations by delivering additional medical personnel and supplies into the objective area as early as possible, particularly as the forces may not be able to evacuate casualties to field hospitals for some considerable time.

917. **Evacuation.** Evacuation by air is a normal procedure during conduct of airborne operations. Priority is given to the wounded. The evacuation of prisoners of war, civilian internees or other selected personnel is sometimes required, in which case priorities are laid down by the airhead commander. The possibility always exists that the air line of communication could be cut off by enemy action or disrupted because of bad weather.

CHAPTER 10

Amphibious Operations

SECTION I INTRODUCTION - CONCEPT OF AMPHIBIOUS OPERATIONS

1001. An amphibious operation is a military operation launched from the sea by a naval and landing force embarked in ships or craft - with the principal purpose of introducing the landing force ashore tactically into an environment ranging from permissive to hostile in order to accomplish the assigned mission. This Chapter outlines the concept and types of amphibious operations, their associated command, control and planning procedures in the context of allied joint operations.

1002. Amphibious operations integrate virtually all types of ships, aircraft, weapons and landing forces in a concerted joint military effort against a hostile or potentially hostile shore. They are probably the most complex of joint operations; detailed specialist knowledge and a high degree of coordination and cooperation in planning, training and execution are essential for success. Amphibious operations require coordination between the combined amphibious task force, the landing force and supporting forces at every level. This relationship dictates that careful consideration be given to the formation of task groups and command structures to provide unity of command and economy of effort.

1003. Amphibious forces offer strategic mobility and operational manoeuvrability together with both political and military flexibility. Although their points of entry may be constrained by geography and hydrography, amphibious forces poised at sea pose a significant problem to an adversary who must disperse forces to defend all possible landing beaches or maintain a larger reserve vulnerable to attack. Given sound, up-to-date intelligence, amphibious forces can exploit the element of surprise and capitalise upon an adversary's weaknesses through application of the required type and degree of force at the most advantageous time and place. Amphibious forces therefore constitute a major force multiplier; their employment can, depending on the specified objectives, achieve effects at the tactical, operational or strategic levels.

SECTION II - TYPES OF AMPHIBIOUS OPERATION

1004. There are four types of amphibious operation.¹

- a. **Amphibious Assault.** Amphibious assault is the principal type of amphibious operation, involving establishment of a force on a hostile or potentially hostile shore. The special measures introduced to meet the requirement for a rapid build-up of combat power ashore, from an initial zero capability, creates organizational and technical differences between amphibious operations and land warfare.
- b. **Amphibious Withdrawal.** Amphibious withdrawal is a type of amphibious operation involving the extraction of forces in naval ships or craft from a hostile or potentially hostile shore.
- c. **Amphibious Demonstration.** An amphibious demonstration is a type of amphibious operation conducted for the purposes of deceiving the adversary by a show of force with the expectation of deluding the enemy into a course of action unfavourable to him. They can deceive an adversary (a feint) or demonstrate intent and capability (a demonstration) in order to tie down forces, create uncertainty, or, as a coercive act of naval diplomacy, reinforce a diplomatic message.
- d. **Amphibious Raid.** An amphibious raid is a type of amphibious operation involving swift incursion into or temporary occupation of an objective followed by a planned withdrawal. Amphibious raids might be conducted to accomplish one or more of the following:
 - (1) Inflict loss or damage.
 - (2) Obtain information.
 - (3) Create a diversion.
 - (4) Capture or evacuate individuals and/or equipment.

1. Only the amphibious assault involves establishing and sustaining a landing force ashore.

SECTION III COMPOSITION AND ORGANIZATION OF AMPHIBIOUS FORCES

1005. **Amphibious Task Force Organization**. An Amphibious Task Force (ATF) is the task organization formed for the purpose of conducting an amphibious operation. An ATF always includes naval forces and landing forces with their organic aviation assets; other air and fire support resources may be included as required. The Commander Amphibious Task Force (CATF) is to be a navy officer, regardless of force composition (see Section VI). He will be responsible for the safe and timely arrival of sea-borne forces at an amphibious objective; landing a force in good order at the right place and time, controlling and coordinating all air operations in the Amphibious Objective Area (AOA), defence of shipping and control of ship-to-shore movement either by surface craft or helicopter.

1006. **Naval Forces**. The naval element of an amphibious task force may include any of the following groups. Two or more of the groups may be joined together for more effective control and their names altered accordingly, at CATF's discretion:

- a. **Transport Groups**. Transport groups provide for the embarkation, movement to the objective, landing, logistic support of the landing force. They comprise all shipping in which the landing force is embarked, including shipping which transports the helicopters and helicopter-borne troops. Landing craft to be employed in the ship-to-shore movement are organic to or attached to the transport groups.
- b. **Control Group**. A control group comprises personnel, ships, and craft designated to control the waterborne ship-to-shore movement.
- c. **Tactical Air Control Groups**. Tactical air control groups are ship-borne organisations necessary for the control of air operations.
- d. **Fire Support Groups**. The fire support groups comprise naval combatants which support landing force operations ashore by naval gunfire and guided missile support.
- e. **Shore-Based Tactical Air Groups**. Shore-based tactical air groups are task organisations assigned to an ATF. They are to be based within, or sufficiently close to, the objective area to provide tactical air support to the amphibious task force.
- f. **Support Carrier Force**. A task organization of aircraft carriers, with embarked aircraft and supporting ships/submarines, which provides naval air support to the ATF.
- g. **Screening Group**. A screening group is a task organization which protects the ATF en route to the objective area and during operations in the objective area.
- h. **Mine Warfare Group**. A task organization of Mine Warfare (MW) units which conducts surface mine laying and/or Mine Countermeasures (MCM) in support of the amphibious operation under the overall direction of CATF, the advance force commander, or the respective local area commander (see paragraph 1009).

- i. **Reconnaissance and Underwater Demolition Group.** A task organisation, including ships, embarked reconnaissance troops and underwater demolition personnel, which conducts reconnaissance, hydrographic surveys and demolition of natural or man-made obstacles.
- j. **Tactical Deception Group.** A task organization which conducts deception operations against an adversary, including electronic, communication, visual and other methods designed to misinform and confuse an adversary.
- k. **Inshore Undersea Warfare Group.** A task organization that provides surface and sub-surface detection of an adversary's targets in the seaward approach to the objective area. It is normally composed of one or more inshore undersea warfare surveillance units.
- l. **Close Covering Group.** Naval combatants assigned to CATF to provide protection against air, surface and sub-surface threats.
- m. **Patrol Aircraft Group.** A task organization of patrol aircraft units which conducts such missions as scouting, reconnaissance and anti-submarine operations while the ATF is en route to and in the objective area.
- n. **Air Transport Group.** A task organization of transport aircraft units which provides air transport for landing force components or logistic support.
- o. **Administrative Group.** A group responsible for administrative and special details in the objective area: repair and salvage; hydrographic surveys; laying of nets, buoys and beacons; initial harbour development and control; port control functions; boat pools; mail, and other tasks as assigned. During the initial stages of an assault, virtually all administrative functions are performed by CATF or his subordinate participating in the assault. Administrative duties are passed to the commander of the administrative group as the progress of the assault permits.
- p. **Naval Beach Group.** A group of traffic control, communications, beach surf salvage, pontoon and fuel elements of the beach party, assault craft (not organic to assault shipping), and combat stevedore elements.
- q. **Other Shipping.** Because amphibious shipping may not be sufficient to satisfy total lift requirements, the use of other shipping may be necessary, particularly for assault follow-on echelons. When employed, they become part of the ATF.

1007. **Landing Force.** The landing force, commanded by a Commander Landing Force (CLF), consists of a headquarters, ground, aviation and combat support units together with their combat service support units.

1008. **Air Support.** Air support can be provided by both maritime and land-based air elements depending upon the location of the AOA although CATF may also possess organic air assets which may be retained for direct support. The joint use of air assets must be carefully coordinated to ensure that maximum use is made of the firepower available. Such integration would be achieved through the

procedures outlined in Section VI of this Chapter and highlights the importance of the appointment of liaison officers in the Air Operations Centre (AOC).

1009. **Advance Force.** An advance force is a temporary organization within an amphibious task force which precedes the main body to the objective area. It participates in preparation of the objective for assault by conducting such activities as special force operations, reconnaissance, seizure of supporting positions, MCM operations, preliminary fire support and underwater demolition. On completion of Advance Force operations any component of the Advance Force may be re-tasked for subsequent operations as required by CATF or the Joint Force Commander (JFC) in accordance with the command and control status given by JFC.

1010. **Fire Support Elements.** The success or failure of an amphibious operation may depend on the effective integration of air, naval surface fire and artillery support. Before, and in the early stages of, the assault phase, the protection of the ATF is very much a naval matter but, once the landing force is sufficiently established ashore, control of these assets will be transferred ashore. The provision of continuous fire support during a landing and subsequent operations ashore is complicated and requires planning and execution by specially trained personnel.

SECTION IV SEQUENCE OF AMPHIBIOUS OPERATIONS

1011. **Sequence.** An amphibious operation is complete within itself, although it is usually coordinated with other Allied joint force operations being conducted within a Joint Operations Area (JOA). It consists of a sequence of five phases, some of which may be concurrent;

- a. **Planning.** The planning phase starts on receipt of the Initiating Directive (see para 1015) for the operation. Planning must be conducted in some detail before any of the other phases can start (see Section V) and will continue throughout the remainder of the operation. In view of the essentially joint nature of amphibious operations, the planning process requires coequal planning by CATF and CLF and must be conducted concurrently and sufficiently early in order to permit CLF to issue orders to subordinates.
- b. **Embarkation.** The embarkation phase is the period during which the forces, with their equipment and supplies, embark in assigned shipping.
- c. **Rehearsal.** The rehearsal phase is the period during which the prospective operation is rehearsed to:
 - (1) Test the adequacy of plans, the timing of detailed operation, and the combat readiness of participating forces.
 - (2) Ensure that all echelons are familiar with plans.
 - (3) Test communications.
- d. **Movement to an Amphibious Objective Area.** During the movement phase, components of an ATF move from the points of embarkation or from a forward deployed position to the AOA. This move may be via rehearsal, staging and/or rendezvous areas. The movement phase is completed when the components of the ATF arrive in their assigned positions in the AOA.
- e. **Assault.** The assault phase is the period between the arrival of the major assault forces of the ATF in the AOA and the accomplishment of the ATF mission. Development of the area for its ultimate use may be initiated during this period.

1012. **Termination.** An amphibious operation will be terminated on the accomplishment of the mission in accordance with the specific conditions contained in the Initiating Directive. For example, the firm establishment of the landing force ashore may be specified as one of these conditions. The landing force is regarded as firmly established ashore when, in the opinion of CLF:

- a. The force beachhead has been secured.
- b. Sufficient tactical and supporting forces have been established ashore to ensure the continuous landing of troops and material required for subsequent operations.
- c. Command, communications and supporting arms coordination facilities have been established ashore.

- d. CLF has stated that he is ready to assume full responsibility for subsequent operations.

1013. When CATF and CLF are satisfied that the conditions in paragraph 1012 have been met, CATF will report these facts to higher authority designated in the initiating directive. This authority may then terminate the amphibious operation, dissolve the AOA and the ATF and provide additional instructions as required, to include command arrangements and disposition of forces. However, the naval forces and navy support elements of the ATF may remain intact, and may continue to provide combat and combat service support to the landing force. An alternative option on termination would be to re-assemble the task force by re-embarking the landing force for potential use elsewhere in the allied joint force campaign.

SECTION V AMPHIBIOUS OPERATIONS PLANNING

1014. **Planning Stages.** Planning for an amphibious operation is a continuous process from receipt of the initiating directive by CATF and CLF to termination of the operation. It requires coequal planning by the CATF and the CLF and must be concurrent. There are three distinct planning stages:

- a. Initiating Directive.
- b. Basic Decisions.
- c. Detailed Planning.

1015. **Initiating Directive.** The initiating directive would be issued by the commander delegated overall responsibility for the operation and contain the following minimum information:

- a. Mission.
- b. Forces.
- c. Commanders and Command relationships.
- d. Amphibious Objective Area.
- e. Targets date(s).
- f. Related supporting operations.
- g. Termination details.
- h. Nuclear, biological and chemical (NBC) defence.
- i. Code names.
- j. Operation and communications security (OPSEC and COMSEC).

1016. **Basic Decisions.** In this stage the options open to the ATF are considered and an outline plan decided upon. The twelve basic decisions that need to be made are as follows:

- a. Select ATF objective.
- b. Select ATF general course of action.
- c. Determine landing force mission.
- d. Designate landing sites.
- e. Determine landing force objectives.

- f. Determine beachheads.
- g. Select landing areas.
- h. Formulate landing force concept of operations ashore.
- i. Select landing beaches.
- j. Select helicopter landing zones.
- k. Select fixed-wing aircraft landing zones and drop zones.
- l. Select the tentative date and hour of landing.

1017. **Detailed Planning.** At this stage each aspect of the outline plan is developed in detail. This results in the amphibious operation order, promulgated on JFC's authority by CATF, which must contain annexes on, at least, the following subjects:

- a. Intelligence (including an environmental assessment).
- b. Pre-assault operations.
- c. Embarkation.
- d. Transit.
- e. Rehearsals.
- f. Assault and ship-to-shore movement.
- g. Termination.
- h. Supporting arms.
- i. Communications.
- j. Air defence and airspace control.
- k. Electronic Warfare.
- l. Logistic.

1018. **Planning Coordination.** Amphibious operations are essentially joint in nature; therefore, not only must they be planned in great detail but, equally important, they must also be planned and coordinated jointly at all levels and be consistent with JFC's campaign plan.

SECTION VI COMMAND AND CONTROL OF ALLIED JOINT AMPHIBIOUS OPERATIONS

1019. **Designation of Commanders.** For an amphibious operation conducted as part of an Allied joint operation a Strategic Commander will designate CATF and CLF in the Initiating Directive. The directive would specify the command relationships between CATF/CLF and other component commanders involved in the Allied joint operation; it would also state what command relationships are to apply following termination of the amphibious operation. Commanders of subordinate task groups within an ATF, if they are not named in the Initiating Directive, would be designated by CATF or CLF as appropriate. If air forces are assigned to the amphibious operation the command relationships should be specified in the Initiating Directive.

1020. **Command Relationships During Planning:**

- a. The planning phase commences on the receipt of the Initiating Directive. During this phase the necessary preparatory measures, including coordinated planning, are effected. Although planning does not cease with the termination of this phase, it is useful to distinguish between the planning phase and subsequent operational phases, since a marked change occurs in the relationship between the commanders of the various service components at the time the planning phase is terminated and the operational phases begin.
- b. During the planning phase CATF, CLF and other commanders designated in the Initiating Directive are on equal levels of command; CATF is responsible for the coordination of planning. All basic decisions must be reached on a basis of a common understanding of objectives and procedures and on a free exchange of information. Any differences which commanders of the components of the ATF cannot resolve should be referred to JFC.

1021. **Command During Operations:**

- a. **Commencement of the Operations.** At the commencement of the operational phases, CATF assumes responsibility for the entire ATF and the operation. He should, therefore, be vested with the commensurate authority to ensure success of the operation.
- b. **AOA.** The AOA is a geographical area, delineated in the Initiating Directive for the purposes of command and control, within which is located the objective(s) to be secured by the ATF. It must be of sufficient size to contain the necessary sea, land and air operations. CATF is responsible for the coordination of all activity within the AOA, including that of friendly forces not part of the ATF. Where such forces are merely in transit, CATF will exercise control of them only to the extent of preventing or minimising mutual interference.
- c. **Operations Ashore.** Subject to the overall authority, responsibility for the conduct of operations ashore and for the security of all personnel and installations located in the area of operations ashore is vested in CLF.

1022. **Consultation Between Commanders.** The complexity and sequential nature of amphibious operations make it necessary for CATF, CLF and component commanders to maintain a continuous, close consultation during the progress of each operation. However, this requirement in no way limits the command authority of CATF.

1023. **Airspace Control During Amphibious Operations.** Subject to the approval of the JFC, the CATF may be designated a Sub-Area Airspace Control Authority (SACA) by the ACA for the duration of amphibious operations. The SACA will exercise overall responsibility for airspace control in the designated sub-area in accordance with the promulgated airspace control plan. The SACA remains responsible to the ACA.

SECTION VII COMMUNICATION AND INFORMATION SYSTEMS IN AMPHIBIOUS OPERATIONS

1024. An amphibious operation requires a reliable, secure, rapid and flexible Communication and Information Systems (CIS). Superimposed on the CIS within a joint force are the additional requirements for the command of the ATF as a whole, for the several special forms of control which must be exercised, and for lateral communications between all elements of the force in the execution of common or coordinated functions.

1025. Changes in command relationships, task organization and disposition of forces require maximum flexibility in communication plans. These plans must not create a requirement for a large number of non-essential nets. Multiple-purpose nets must be used, where appropriate, to reduce mutual interference and frequency requirements.

1026. Use of alternative means of communication, such as visual, helicopter or surface messenger, must be exploited to ensure the most rapid and secure delivery of information between widely dispersed forces within an ATF.

SECTION VIII LOGISTIC SUPPORT IN AMPHIBIOUS OPERATION

1027. For the purpose of this Section, the term logistics includes all elements of combat service support (CSS) including medical/health service support. The logistic plan must provide continuing and coordinated logistic and administrative support to the landing force during a period in which its logistic system is primarily ship-based.

1028. **Logistic Requirement.** There are three essential logistic support requirements in amphibious operations:

- a. The orderly assembly and embarkation of personnel and materiel in a sequence designed to meet the requirements of the landing plan and subsequent shore operations.
- b. The establishment and maintenance of a logistic support system in the AOA which will ensure adequate logistic and administrative support for all elements of the ATF.
- c. The initiation of a logistic support system for subsequent support of base development and garrison forces.

1029. **Logistic Support Planning Factors.** Consideration must be given to the following factors affecting logistic support planning for an amphibious operation:

- a. The character, size and expected duration of the contemplated operation within the overall context of JFC's campaign plan, objectives and logistic criteria.
- b. The target date.
- c. Characteristics of the AOA (eg geography, environment, size etc).
- d. An adversary's capabilities.
- e. Strength and composition of the landing force.
- f. Capabilities of the landing force to perform CSS functions.
- g. The progressive increase in the level and form of logistic support required by the build-up of forces in the AOA. Support required to provide for prisoners of war.
- h. Availability of bulk handling equipment, beach roadways, landing craft and wheeled transport.
- i. Compatibility, capability and requirements of logistic support systems within the allied joint force as a whole.
- j. Availability of communications means.
- k. Elements of the relevant base defence and garrison defence plans.

- l. Requirements for rehabilitation or construction of aviation installations within, or in supporting distance of, the AOA.
- m. Removal of waste materials generated by ships of the ATF.
- n. Medical healthcare considerations.

SECTION IX INTELLIGENCE SUPPORT TO AMPHIBIOUS OPERATIONS

1030. Intelligence planning for an amphibious operation is governed by the specialised intelligence that force commanders need to plan and execute an operation. The complexity of amphibious operations requires the establishment of a Joint Intelligence Centre (JIC) to provide intelligence support to the CATF/CLF and their staffs. The JIC, which should be manned by joint intelligence staff, is responsible for: the integration of information, the analytical process and dissemination of intelligence.

CHAPTER 11**Operational Controls and Procedures****SECTION I BATTLEFIELD ILLUMINATION****1101. Concept.**

- a. Battlefield illumination is defined as “the lighting of the battle area by artificial light either visible or invisible to the naked eye” (AAP-6).
- b. The capability to illuminate the battlefield at an appropriate point is an important factor in the development of maximum combat power. The requirement for battlefield illumination may originate at any level from an individual soldier to a formation headquarters.
- c. Although battlefield illumination will be employed primarily to assist friendly forces on the battlefield, it may also be used offensively to defeat enemy surveillance equipment or as part of a deception plan.

1102. Principles of Employment.

- a. Illumination once provided, must be continued so long as it is required.
- b. Battlefield illumination must be closely coordinated with adjacent units and formations in order to prevent the exposure of friendly positions and operations and preserve the performance of friendly night viewing aids.
- c. Illumination should, whenever possible, be provided by a source not directly in contact with the enemy being engaged. A unit providing such support must be in direct communication with the commander of the unit/formation in contact.
- d. Illumination, when used, should, if feasible, be provided by two or more independent sources to ensure reliability and continued availability.
- e. Illumination should be provided by the highest level practicable in order to conserve resources available to subordinate echelons.

1103. Planning.

- a. In addition to terrain and atmospheric factors, staff who plan the use of illumination must be aware of the limitations:
 - (1) The danger of compromising friendly forces.
 - (2) The possibility that inconsistent orders among unit/formations might lead to an uneven application of illumination policy along the FEBA.

- (3) The possible adverse effect of illumination on certain night viewing aids, although, if used carefully, it can enhance the performance of certain systems (eg image intensifiers).
- b. Illumination will be based upon the requests of supported units, the judgement of the commander and, if applicable, direction from higher headquarters. Details will normally be found within the night surveillance/night visibility plan which should, in turn, be part of an overall unit or formation surveillance plan. Issues involving battlefield surveillance, night observation/visibility and illumination should be addressed in a single annex attached to any operation order issued by a headquarters.

1104. **Methods of Battlefield Illumination.** Methods of battlefield illumination that may be employed by land force commanders include:

- a. Ground signals, illuminating grenades and trip flares.
- b. Searchlight illumination:
 - (1) Visible - direct, indirect, diffused or reflected.
 - (2) Infra-Red (IR)
 - (3) Gated Laser Target Illumination (Laser Enhanced Viewing).
- c. Artillery and mortar illumination.
- d. Naval gunfire illumination.
- e. Aircraft flares.

1105. **Command and Control.**

- a. The ordering of battlefield illumination is a command responsibility.
- b. Command and control of battlefield illumination must be exercised by the tactical commander in the area to be illuminated.
- c. Coordination shall normally be accomplished by the tactical commander in the area to be illuminated.

1106. **Conclusion.** While the importance of Battlefield illumination might diminish as night viewing aids become more widely available on the battlefield, if carefully employed, it will continue to be a valuable asset to the commander.

SECTION II FRATRICIDE AVOIDANCE

1107. **General.** One of the fundamentals of military operations is Security and Protection of the force. A key component of this fundamental is the prevention of fratricide; the unintentional killing of alliance/friendly soldiers by our own fire. The destructive power and range of modern weapons, coupled with the intensity and rapid tempo of the battlefield, and 24 hour operations during periods of limited visibility, increase the likelihood of fratricide.

1108. **Concept.**

- a. Fratricide avoidance and reduction measures fall under both material avoidance measures (electronic and/or mechanical identification devices, vehicle marking) and non-material measures (leadership, doctrine, training, situational awareness).
- b. The primary mechanisms limiting fratricide are strong command, disciplined operations, sound training, good SOPs, and detailed situational awareness. With this knowledge, commanders can exercise positive control over fire, timing of troops movements, and disciplined operational procedures. They must seek to lower the probability of fratricide while not overly constricting boldness and audacity in combat.
- c. Fratricide avoidance begins with effective realistic training programmes which include nation's unilateral training on vehicle recognition of alliance equipment and uniforms, weapon training, adherence to alliance doctrine etc. Unilateral training is then tested in combined training exercises with well established training goals and objectives.

1109. **Planning.**

- a. **Command and Control (C2).** Sound operational planning and effective C2 are critical measures in fratricide avoidance. The Commander's intent and concept of the operation should receive special attention. Additional C2 considerations are:
 - (1) The need to establish and enforce positive control measures; clear easily understood common operational graphics, zones of operation, etc.
 - (2) Management of the manoeuvre/battle space and all its dimensions.
 - (3) The utilization of liaison teams or integrated staffs between alliance members.
 - (4) The establishment and reinforcement of Rules of Engagement (ROE) for all combined and joint elements of the force; ground to air, air to ground, and surface to surface engagements.
 - (5) The need for both line of sight and non line of sight ROE to be established with special consideration for dismounted troops.
 - (6) Ensuring that alliance members are familiar with each others equipment.
 - (7) The need to demand some form of effective training and rehearsals regardless of time constraints.

- b. **Manoeuvre.** Manoeuvre on the future, probably non-linear, battlefield may at times be confused. The fog of war, limited visibility, confusion, fatigue and rapid movement will contribute immeasurably to the potential for fratricide. Planning considerations in the manoeuvre plan should include:
- (1) Remember the "Simplicity" Principle of War.
 - (2) Detailed planning with emphasis on rehearsals and careful wargaming (action versus reaction process).
 - (3) Thorough reconnaissance of the operational area if the need for operational security permits.
 - (4) Brief backs to the commander concerning your (subordinates) manoeuvre plan.
 - (5) Recognition of participating units, soldiers, and vehicles.
 - (6) Fire control measures including "quick" cease fire procedures.
 - (7) Air support arrangements, including communication, liaison, IFF procedures, and fire control measures.
- c. **Fire Support.** The focus of fire support at the operational and tactical levels is the synchronization of the full range of fire provided by all friendly forces. The integration of artillery, armed aircraft, non-line-of-sight Army fire, naval gun fire, close air support, air interdiction, and electronic countermeasures requires the development, full understanding, and rigid adherence to a common set of fire control measures. Alliance measures should be routine, but they must receive continuous emphasis to ensure timely, effective fire and to minimize fratricide.
- d. **Situational Awareness (SA).** Understanding the mission, enemy, terrain, environmental conditions, friendly forces and time available is key to situational awareness - understanding the circumstances in which one is fighting. SA includes but is not limited to: knowing your location, the location of friendly forces, the location and aim of the enemy, your mission and the missions of friendly forces around you. Additionally SA includes knowledge of the contribution that intelligence makes to SA. Other considerations include:
- (1) SA for logistics/service support elements, which means CSS elements be as situationally aware as combat formations/units.
 - (2) Liaison elements must be integrated into the supported units information chain. Often attached or temporarily assigned formations are not included in the information flow.

SECTION III REAL ESTATE MANAGEMENT

1110. **Introduction.** The multitude and broad variety of formations, weapons, combat support systems and combat service support installations and their respective requirements, may force a commander to allocate responsibility for the control of real estate to subordinate commanders who will then assume responsibility for its security and for making the best possible use of it. Whoever is responsible must, however, be prepared to adapt the procedures for real estate management to meet the needs of whatever operation is taking place or about to take place.

1111. **Definition.** Real estate is an area allocated to a unit or formation, though not always for its exclusive use, for tactical or administrative purposes. Allocation is often done in multiples of square kilometres and is controlled by the appropriate HQ. Careful analysis of each kilometre square must be conducted before allocation so that the requirements of a formation, unit or sub-unit are met.

1112. **Purpose.** The purpose of real estate management is to:

- a. Make the best use of the terrain according to the commander's concept of operations.
- b. Allocate to every unit and formation an area which meets their differing requirements.
- c. Avoid friction between formations intending to use the same area.
- d. Ensure that the whole area of operations is secured by a responsible commander.

1113. **Responsibilities.**

- a. Real estate management is a G3 responsibility. Areas are allocated to subordinate commanders and other units operating within the commander's area of responsibility. They are then responsible for coordination with all units not under their command but which are operating in his allocated area, and for the allocation of areas to their subordinate commanders.
- b. The allocation of an area does not imply that there must be only a single user. Other units will coordinate their requirements with the responsible main user in order to ensure that they only use parts of the area that he does not need. Adjacent units must also coordinate their activities closely in order to prevent fratricide occurring and to avoid other undesired incidents.
- c. In the event of a clash of interests and to resolve potential problems, a list of priorities must be prepared by the G3 staff according to the situation. A priority list might include the following:
 - (1) Tactical deployment of units/formations. (Including related obstacles).
 - (2) Reserves.
 - (3) Countermove areas.
 - (4) First line Combat Service Support to tactical units/formations.

- (5) Special forces.
- (6) ISTAR/EW troops.
- (7) HQs and communications installations.
- (8) Artillery units.
- (9) AD assets.
- (10) Aviation units.
- (11) Engineer units.
- (12) Second line Combat Service Support units and installations.
- (13) Third line Combat Service Support units and installations.
- (14) Medical units.

- b. Internal allocation of real estate must be registered with the relevant higher headquarters.

1114. Planning.

- a. The non-linear and extended battlefield may no longer permit the employment of formations in close proximity. The creation of gaps, observed areas and extended lines of communications will need to be considered. Nevertheless, planners must be aware that, when deploying forces, the entire theatre of operations must be allocated to one or more responsible commanders. The policy of allocation will depend on the situation and consideration must be given to the following factors:
 - (1) Future operations.
 - (2) A unit's ability to defend itself.
 - (3) The security of rear areas.
 - (4) The benefits of collocating.
 - (5) The advantages of dispersion.
 - (6) Command, control and communications.
 - (7) The proximity of MSRs, railways, canals, ports and airfields.
 - (8) The strengths and weaknesses of units.
 - (9) Flexibility in order to deal with changes in the situation.

- b. A draft real estate management plan should be produced as part of the operations plan. After reconnaissance and coordination with adjacent units, the main users will report back to the G3 cell of their higher headquarters who will then issue the final real estate management plan, adjudicating conflicts of interest according to the priority list agreed by the commander.
- c. The final plan must be constantly reviewed in order to ensure that it meets the needs of the current situation.

SECTION IV THE CONTROL OF DEMOLITIONS**1115. General.**

- a. In all types of operations the planned use of demolitions is related to the operational plan. Normally demolitions will be used to close defiles where terrain or man-made obstacles canalize or restrict the movement of enemy forces approaching or crossing a barrier. Unlike other types of man-made obstacles which become progressively more effective as work proceeds, with demolitions no blockage is created until the charge is blown. This enables troops operating forward to pass through the obstacle as they withdraw. The enemy will do his utmost either to seize prepared demolitions and prevent them being fired, or to force the premature firing of demolitions to prevent the withdrawal of friendly forces. The timing of the firing of demolitions is, therefore, all important.
- b. A system for the control of demolitions is essential. The control of what is to be destroyed and when it is to be destroyed, is a matter for the formation commander and his staff. The guarding and firing of demolitions is a vital task of war and cannot be allowed to fail. The orders concerning all aspects of demolition must be simple, clear and easily understood. They are standardized for NATO in STANAG 2017.

1116. Types of Demolition. For tactical purposes demolitions are defined as:

- a. **Preliminary Demolition Target.** A target other than a reserved demolition target, which is earmarked for demolition and which can usually be executed immediately after preparation, provided that prior authority has been granted.
- b. **Reserved Demolition Target.** A target for demolition, the destruction of which must be controlled at a specific formation level of command because it plays a vital part in the tactical or strategic plan, or because of the importance of the structure itself.

1117. Planning.

- a. The planning of demolitions and the classification of a demolition as preliminary or reserved are decisions for the commander on the recommendation of his engineer adviser. The selection of reserved demolitions is a matter of judgement depending on tactical factors and the technical difficulties of preparing and completing the demolitions.
- b. In some areas of operations constraints are imposed in agreements with the host nations, which require an additional degree of control to be imposed over the firing of demolitions. These constraints must be known and understood by all concerned with the planning and execution of demolitions within those areas.

1118. Execution.

- a. **Preliminary Demolitions.** The selection of preliminary demolitions is a command responsibility but, as there will seldom be a demolition guard, the authority to fire will normally be delegated to the engineer officer responsible for preparing the demolitions. Preliminary demolitions should be prepared in accordance with existing or established

plans. Such demolitions should be fired as soon as the situation permits and authority for their execution is granted. The procedures to be followed for the preparation and firing of preliminary demolitions are contained in STANAG 2017 which will usually be completed in an abbreviated form.

- b. **Reserved Demolitions.** As the firing of these must be closely controlled by a specific military authority, they must be guarded until the demolition is successful. Authority to fire the demolition is retained by the authorized commander, or delegated by him to a nominated officer. Reserved demolitions are located at defiles and crossing points on withdrawal routes which cannot quickly be bypassed. They should be secured by demolition guards, as failure to secure such a reserved demolition could lead to the complete failure of the operation. The procedures to be followed for the preparation, protection and firing of a reserved demolition are contained in STANAG 2017, and these must be known and understood by all concerned. Their duties and responsibilities are summarized as follows:
- (1) **Authorized Commander.** The officer empowered to authorize the firing of the reserved demolition is called the authorized commander. The authority to fire reserved demolitions is likely to be confined to formation commanders in the early stages of the operation to be conducted. However, as the operation proceeds, authority may be delegated to a lower commander, who then becomes the authorized commander. It is essential that secure and reliable communications exist between the authorized commander and the demolition guard commander. It is also essential that the authorized commander should specify whether the demolition guard commander is authorized to order the firing of the demolition on his own initiative if the enemy is in the act of capturing it. Orders must be issued by the authorized commander to the demolition guard commander and demolition firing party commander on the NATO proforma agreed in STANAG 2017.
 - (2) **Demolition Guard.** A demolition guard is a force positioned to ensure that the demolition is not captured or sabotaged by an enemy before it has been successfully fired. The commander of the demolition guard is responsible for the operational command of all troops on the demolition site, including the demolition firing party. He is responsible for transmitting the order to fire, in writing, to the demolition firing party. He is also responsible for reporting the effectiveness of a demolition to the authorized commander and for keeping him informed of the operational situation at the demolition site. The orders to the demolition guard commander are issued on the NATO proforma agreed in STANAG 2017.
 - (3) **Demolition Firing Party.** The demolition firing party is technically responsible for the demolition. It is normally an engineer party commanded by a junior non-commissioned officer. Demolition firing parties are required for preliminary demolitions as well as reserved demolitions. The orders to the demolition firing party commander are issued on the NATO proforma agreed in STANAG 2017.

1119. **Liaison.** Each unit and formation due to pass through a gap in a barrier/obstacle, prepared for closure by demolition, should send a liaison element in advance of the arrival of troops, if the passage is to be conducted in the vicinity of enemy forces. The duties of these liaison elements are:

- a. Report to the demolition guard check-point with details of the type, strength and equipment of the force.
- b. Maintain contact, by radio, with their parent formations or units in order to provide accurate and up-to-date information on their progress. This information should be passed to the demolition guard commander through the check-point commander.
- c. Help establish whether approaching vehicles and troops are friendly or enemy.
- d. Check all troops and vehicles as they pass through the check-point and report to the demolition guard commander, through the check-point commander, when the unit has completed its passage.

CHAPTER 12

Operations in Specific Environments

SECTION I OPERATIONS IN BUILT-UP AREAS

INTRODUCTION

1201. **General.**

- a. The purpose of this section is to outline the effects of built-up areas on tactical operations.
- b. Built-up areas include cities, towns, villages and concentrations of industrial installations. These areas are increasing in number and size throughout the world, particularly in Western Europe. For this reason, the tactics and techniques of fighting in built-up areas are becoming increasingly important. The effects of any operation on the civilian population must be considered in the planning and conduct of fighting in built-up areas and in this context the Geneva Protocol should be borne in mind, particularly those aspects concerning the civilian population and responsibilities for protection of national culture.

EMPLOYMENT CONSIDERATIONS

1202. **Concept.**

- a. Built-up areas normally are the centres of the road network. As the need for roads as axes for the movement of wheeled vehicles and specialist equipment, and even more as lines of communication will remain, despite the cross-country mobility of land forces, it will be decisive to retain control of built-up areas. Furthermore, these areas often contain valuable economic or political installations and large numbers of the population. They may therefore become areas of combat.
- b. The destructive effect of fire may make roads and streets completely impassable. Seriously damaged built-up areas will pose a major obstacle.
- c. Whether attacking or defending, a large number of infantry will be required. If a built-up area is defended, it may be preferable to an attacker to bypass or encircle it rather than become engaged in the task of taking the area which is a costly operation both in time and in manpower.
- d. A built-up area which can easily be avoided has little defensive value though it may have a channelling effect. Thus a built-up area is usually only worth defending if it is located in such a way that the enemy has to launch a direct attack or to make a time-consuming manoeuvre to bypass it.
- e. The decision whether or not to attack or defend an extended built-up area will be taken by the highest command. This decision to defend must take account of the adverse effect on morale of abandoning important urban areas, with their populations, to the advancing enemy.

Equally, the commander will realize that the defence of the built-up area will use up a disproportionate number of troops and will involve the civilian population in an area of combat.

1203. **Mission.** While the defender tries to draw the attacker into the defended area, the attacker has to decide how to deal with the situation. He has three options:

- a. To attack the position.
- b. To neutralize the defender in the built-up area.
- c. To seal off and bypass, using follow-up troops to capture and clear the area.

1204. **Characteristics.** Operations in built-up areas are characterized by:

- a. Limited fields of fire and observation.
- b. Excellent protection, cover and concealment for troops and equipment, which increases the difficulty of estimating the strength of the force.
- c. Reduced possibilities for manoeuvre, particularly for mechanized units, but increased possibilities for infiltration and bypassing. Control may have to be decentralized.
- d. Close-quarter combat including the increased vulnerability of vehicles to short-range attack.
- e. The presence of a civilian population which can very seriously limit military actions.
- f. Difficulties in command, control and communication.
- g. High consumption of ammunition and combat supplies.
- h. A battle that is likely to be fought on three levels; on the surface at street level, above the ground on rooftops and in buildings and underground in sewers and subway systems.
- i. Increased potential for encountering Toxic Industrial Material and endemic diseases.

1205. **Limitations.** The conditions peculiar to fighting in built-up areas produce the following limitations:

- a. **Fields of Observation and Fire.** Fire positions in defensive areas have to be selected carefully in order to take advantage of the limited observation and fields of fire available.
- b. **Information.** Detailed knowledge of the area will offer an advantage to the defender. The attacker will have to obtain this type of information.
- c. **Concealment.** Positions are difficult to locate, strengths hard to estimate and enemy intentions hard to predict. Stay behind observation posts will be of considerable value.

- d. **Movement.** The ability to move is generally very limited. The more buildings are damaged, the more cover there is for the defender and the harder it is for the attacker to advance. Progress will be slow.
- e. **Weapon Employment.** Short range weapons and grenades will be used extensively and there may be difficulties in firing weapons with a back blast. Mutually supporting fire will be difficult to achieve. Indirect fire weapons and tanks will be of limited use in really close combat but they will be of use in more open areas.
- f. **Fire.** Depending upon the construction, building fires may be an important consideration. It may be possible for the attacker to 'burn the defender out', conversely, buildings used by the attacker will be subject to attack in this manner.
- g. **Stress.** Street fighting is physically and mentally exhausting, success being measured in metres, building by building. In these circumstances, much will depend on the initiative and standard of leadership at the lower levels of command. The maintenance of combat efficiency may require the frequent rotation of troops in contact.

CONDUCT OF OPERATIONS

1206. Organization.

- a. **Defensive Operations.** The defence of a built-up area is organized around terrain features and buildings which preserve the integrity of the defence and provide ease of movement to the defender. Defences must be prepared in depth. Infantry will normally fight dismounted in small groups, reinforced by engineers and armour.
- b. **Offensive Operations.** Offensive operations in built-up areas require large numbers of troops and much time. Planning must be well coordinated, but execution will be decentralized. The infantry will normally fight dismounted, supported by engineers and armour.

1207. Planning.

- a. **Defensive Operations.** In large built-up areas, the concept of operations should be flexible and exploit depth, with the defender concentrating on moving forces from key terrain features or buildings to other similar features, to counter the main thrust. Although the principles employed are generally the same as for other defensive operations, the differences are in the techniques employed and the emphasis on certain fundamentals:
 - (1) When time permits, planning for the defence is detailed and centralized. Since most actions are conducted by small units, control is decentralized.
 - (2) Although concealment and cover will be plentiful, observation will be limited. Special attention must be given to achieve mutual support and all-round defence to counter enemy infiltration. The nature of the terrain usually leads to close-quarter combat. Defensive measures may include the barricading of streets and the employment of short-range direct fire weapons. Ideally the defence should be based on the following:

- (a) Mutually supporting posts on the perimeter which withdraw or shift when they can no longer influence the battle.
 - (b) Mutually supporting strong points in depth; this may not be possible except at low level. A local reserve must be designated to cover gaps.
 - (c) A centrally located mobile reserve.
- b. **Offensive Operations.** The following points are important when planning offensive operations:
- (1) **Simplicity.** Control is difficult and plans must be simple and flexible. It is unwise to plan in detail too far ahead, and it must be possible to adjust plans to exploit local success. Orders will normally cover the whole operation in outline and only the first phase in detail. Plans for each subsequent phase, will be made and detailed orders issued as the preceding phase is being completed.
 - (2) **Information.** Maximum information on the layout of the town and the defender's dispositions is essential. Sources will be:
 - (a) Maps, town plans, guide books and air photographs.
 - (b) Patrols.
 - (c) Reconnaissance by air.
 - (d) Local agencies, including national territorial forces, inhabitants and refugees.
 - (3) **The Essentials.** The plan must take note of the following:
 - (a) **Objectives.**
 - (i) The attack must be planned so that progress to the final objective is made by a series of intermediate objectives. These provide the firm base for a subsequent phase and must be held in strength to prevent reoccupation by the enemy.
 - (ii) The selection of the final objective should ensure that its capture will make the defence untenable.
 - (b) **Control.** Strict control by commanders at all levels is vital. Axes of advance, objectives, report lines, phase lines and boundaries assume particular importance.
 - (c) **Momentum.** Momentum must be maintained, night and day, as the slightest pause will give the enemy time to regroup, react and regain the local initiative. It is, therefore, essential that the plan caters for:

- (i) Successive units and sub-units taking over the advance by leap-frogging.
- (ii) Reserves placed well forward so that they can react quickly to the unexpected or exploit a tactical advantage.
- (iii) The replenishment of ammunition and other combat supplies and the evacuation of casualties.

1208. Execution.**a. Defensive Operations.**

- (1) **FEBA.** The position of the FEBA will be influenced by the types and quantity of forces available, and the size of the built-up area to be defended. It should not appear to the enemy as a clearly defined line on which he can concentrate his supporting fire and, if possible, should be sited to prevent the enemy from entering the outskirts of the area unhindered and using the cover of the buildings to deploy his forces.
- (2) **Area Responsibilities.**
 - (a) Defences are coordinated in order to prevent encirclement and penetration. Measures are taken to maintain surveillance over the entire area, and to defend, at short notice, in any direction.
 - (b) In larger built-up areas, where the problem of a long perimeter is aggravated by restricted fields of fire, the defence will have to concentrate on selected areas only. In these areas, defence will be based upon self-contained strong points around which mobile elements operate.
- (3) **Strong Points.** Building or groups of buildings which are strongly constructed and well sited for defence may be used as strong points. These should be integrated into the overall defence and prepared for continued resistance even when bypassed and isolated.
- (4) **Obstacles.** The preparation of obstacles will impose heavy demands on engineer resources. Blocks of houses and large buildings may be used as obstacles to the enemy with their canalizing effects being improved by using local material, barbed wire, craters and road blocks to create barriers. The barrier plan must be carefully coordinated and disseminated to all units, otherwise the defender's ability to move quickly, based on the knowledge of the ground, will suffer.
- (5) **Surprise.** The demoralizing effect on the enemy of well-planned booby traps in houses, delayed charges and obstacles can contribute to a successful defence.
- (6) **Aggressive Action.** The defender should exploit his knowledge of the built-up area to act offensively. Aggressive patrolling, raids, sniping and ambush tactics can be

used to surprise and disrupt the attack. The defender may also attempt to infiltrate back into areas which the enemy has cleared but is not occupying.

- (7) **Counter-Attacks.** In this environment major counter-attacks require centralized planning and decentralized execution. At the lower level, counter-attacks take advantage of the cover and concealment afforded by built-up areas. Small units aim to regain key terrain, including buildings to attempt to eject the enemy from the area.
- b. **Offensive Actions.** The attack on a built-up area may be divided into three phases. They may take place concurrently. In any event there should be no pause between the phases, with units moving rapidly to deepen the penetration before the defender can react.
 - (1) **Isolation of the Area.** The aim is to isolate the area by seizing terrain features dominating the approaches. Enemy defences of terrain obstacles may prevent complete isolation. As a minimum, the attacker must secure positions outside the area from which he can support the point of entry, the capture of positions, and raids to disrupt key positions.
 - (2) **The Assault.** This consists of the advance to the perimeter of the area and the seizure of a foothold in buildings on the near edge. This phase reduces or eliminates the defender's ground observation and his ability to direct fire onto the approaches. The attacker uses concealed approaches from the foothold area to close with the defender and commence the systematic clearance of the area. This part of the plan must be simple with limited objectives. Careful control is necessary to maintain momentum.
 - (3) **Clearance.** This consists of fighting through the area to clear the enemy. Planning should be carried out in considerable detail to offset the difficulties of control. This phase is characterized by decentralized actions of small units, often reinforced by demolition teams, to accomplish the methodical clearance of assigned zones. In extended built-up areas it may sometimes be necessary to clear just a corridor as a means of crossing the area.

1209. **Use of Armour.**

- a. **General.** Although the brunt of operations in built-up areas falls on the infantry, their success will depend on all arms cooperation. This includes the use of armour which, with close infantry protection, can provide intimate direct fire support. They will be of particular value in the assault as cut-off troops and in dominating open areas.
- b. **Tasks.**
 - (1) In offensive operations, armour can be used for:
 - (a) Making holes in buildings to gain entry.
 - (b) Destroying baracades.

- (c) Suppressive fire into buildings prior to the entry of infantry.
 - (d) Reducing enemy withdrawal routes by fire.
 - (e) Block enemy strong points.
 - (f) Protecting flanks.
 - (g) Clearing rubble when fitted with a dozer blade.
- (2) In defensive operations armour will form an integral part of the perimeter force and a mobile central reserve. They will also be useful within defended localities, providing mobile support for strong points or in the anti-tank role from prepared fire positions. They must not be used as static pill boxes in the open. Tank dozer blades can provide quick demolitions and can clear rubble.
- c. **Restrictions.** The use of armour in built-up areas is restricted by:
- (1) A lack of mobility as they are confined to roads or streets which will often require clearance of debris, mines etc.
 - (2) Buildings, which will restrict the full traverse of turrets. Also the elevation of main armament may be insufficient to reach top floors and roof tops. This will not apply to smaller calibre weapons.
 - (3) Vulnerability to short range anti-tank weapons. Tanks should move closed down to avoid crew casualties from snipers. They should also move in short bounds using suppressive fire and being supported, if possible, by other tanks. At all times tanks will require infantry support and protection.

1210. **Employment of Combat Support Forces.**

- a. **Artillery.** The main considerations concerning the use of artillery in built-up areas are:
- (1) **The Direct Fire Role.** Guns used in the direct fire role can be very effective against strong points and buildings.
 - (2) **The Indirect Fire Role.**
 - (a) The close proximity of the enemy and own troops increases the hazard from friendly force fire.
 - (b) Observation and adjustment of fire is more difficult. The use of air observation posts may help to overcome this problem.
 - (3) **Fire Effects.** Supporting artillery fire may create obstacles which have to be crossed later.

- b. **Air.** Air will be particularly valuable for:
 - (1) Reconnaissance.
 - (2) Precision bombing against strong points.
 - (3) Interdiction tasks against enemy forces attempting to withdraw or moving to reinforce.
- c. **Helicopters.** Helicopters may be used for the following tasks:
 - (1) For visual and photographic reconnaissance.
 - (2) To provide fire support.
 - (3) To control indirect fire or close air support.
 - (4) To deliver troops and observation posts to the tops of high buildings.
 - (5) To move cut-off parties and reposition forces.
 - (6) Radio relay and the positioning of communications facilities.
 - (7) Casualty evacuation, particularly from areas inaccessible to wheeled or tracked vehicles.
 - (8) To deliver CSS supplies.
- d. **Air Defence.** In order to allow for early engagement of enemy aircraft, it may be necessary to deploy air defence units near the forward edge of the city or town, or on the highest available and usable terrain.
- e. **Engineers.** Combat support tasks for engineers are:
 - (1) **In Defence.**
 - (a) Denial of areas and routes by demolitions and other obstacles, mining and booby trapping. R
 - (b) Clearance of obstacles to movement.
 - (c) Strengthening buildings.
 - (d) Clearing a network of routes for infantry, through buildings
 - (e) Clearing fields of fire.

(2) **In Attack.**

- (a) Clearance of mines, booby traps, debris and obstacles.
 - (b) Clearing a network of routes for infantry through buildings.
 - (c) The use of explosives to destroy strong points and fortifications.
 - (d) Maintain and, where possible, improve routes/roads to permit movement.
- e. **EW.** EW effectiveness will be limited by the short range of electronic equipments (both friendly and hostile). As a consequence, more resources than are usually available may be required.

1211. **Responsibilities of Command and Control.** Because of the restrictions on communications, observation and the limitation of access, control will be difficult and should normally be decentralized. The initiative of commanders of small units/detachments assumes added importance during operations in built-up areas.

1212. **Civil-Military Cooperation (CIMIC).** Close cooperation between civil authorities, territorial commands and tactical commanders should be established and maintained. Within the restraints of the resources available and the mission, the tactical commander should provide, or assist in the provision of:

- a. Coordination of plans for the evacuation of the civilian population.
- b. Provision of humanitarian aid.
- c. Coordination of Displaced Persons (DPs) planning with lead civilian agencies.
- d. Assistance in the negotiation with Host Nation authorities.
- e. Advice on target analysis to avoid collateral damage.
- f. Protection from the immediate effects of military operations.
- g. Maintenance of essential services.

1213. **Coordination.**

- a. **Control.** The following should be noted in the control of fighting in built-up areas:
 - (1) **Sectors.** The area must be divided into clearly designated sectors.
 - (2) **Report Lines.** These will normally be selected along streets at right angles to the line of advance.

- (3) **Boundaries.** These should be parallel to streets, and include the buildings on both sides of the street to avoid splitting an avenue of approach.
- (4) **Coordinating Points.** These are essential to maintain cohesion.
- (5) **Exclusion Areas.** Those areas that pose a potential risk of encounter with Toxic Industrial Materials.

1214. **Communications.** Communications in built-up areas can be extremely difficult. Radios will be heavily screened and subject to greatly reduced ranges. As a consequence, they must be carefully sited and maximum use must be made of rebroadcast stations and the remoting of antennae to high points. The use of high power sets in armoured vehicles may have an advantage over manportable sets. If time and the battle situation allow, maximum use must be made of the civilian telephone system supplemented by the laying of line. This will be more useful in the defence than the offence.

1215. **Combat Service Support.**

- a. **General.** Support plans for a defending force must consider the prospects of a siege. The situation may be complicated by the need to provide for the civilian population in the area but the commander should ensure that their presence is not permitted to hamper operations. In coordination with the local civil authority, arrangements must be made for:
 - (1) The maintenance of public utilities including gas, electricity, water and sewage.
 - (2) The distribution of food; rationing may be necessary.
 - (3) Sanitation and public health.
 - (4) Maintenance of medical service.
 - (5) Maintenance of public order and safety by policing and measures such as curfews.
- b. **Supplies.** The defenders will be able to pre-stock supplies of all categories within the area, preferably in several distribution points. Resupply may be possible by airdrop or helicopter.
- c. **Casualty Evacuation.** Stretcher teams may be required to move patients through rubble-filled streets which are impassable to vehicles. Helicopters may be used in this role and for evacuation out of the built-up area.
- d. **Fire-fighting.** In the defence of large towns or cities, attention must be paid to fire-fighting measures. Fire-fighting is a responsibility of all units, according to policies established by commanders.

SECTION II OPERATIONS IN FORESTS**INTRODUCTION**

1216. **General.** The purpose of this section is to outline the effects of forests on tactical operations. The term 'forests' will be used to describe expanses of terrain which are completely covered by forests or where the majority of the area is wooded and where vehicle movement is largely restricted to roads, clearings and fire breaks, necessitating different tactics to those employed in more open terrain.

EMPLOYMENT CONSIDERATIONS

1217. **Characteristics.** Operations in forests have the following characteristics:

- a. The tempo of operations is greatly reduced.
- b. Fields of observation and fire are limited and, therefore, fighting often takes place at short range.
- c. Concealment afforded by the trees increases the possibility of surprise.
- d. It also increases, at all levels, the problem of command and control which is further added to by a degrading of radio communications. This may call for decentralization of command and increased liaison.
- e. During periods of dry weather, the increased possibilities of forest fires must be considered.
- f. Forests reduce the effectiveness of firepower. Because of the problems of observation and difficulty of target acquisition, long-range weapons lose many of their advantages. Man portable weapons become increasingly important and, when targets do appear, a quick, accurate response is vital.
- g. The high trajectory of mortars makes them very suitable for operations in forests, since they can be used from any small clearing.
- h. The effectiveness of conventional high explosive ammunition against unprotected personnel is increased by the fragmentation effect of explosions in tree branches.
- i. Limited visibility will have a psychological effect on the troops who are employed in operations in forests for extended periods of time.

1218. **Concept.**

- a. There will be fewer opportunities to use massed armour. Depending on the size of trees, their spacing, the undergrowth and the ground, armoured vehicles may be able to force their way through, off the tracks, although this will be a slow process. A large proportion of dismounted troops than normal is required in the defence as well as attack.

- b. Forest areas have the effect of splitting up and canalizing an attacking force. They favour troops engaged in defence or delay. Characteristically, the battle will be a series of isolated small unit actions. The maintenance of a cohesive posture will be extremely expensive in troops; commanders may find it necessary to accept gaps. Because of the excellent concealment for operations, there are increased opportunities to outflank, infiltrate and ambush, and a small force can have an influence on the battle out of proportion to its size.

CONDUCT OF OPERATIONS

1219. **Organization.**

- a. **General.** Some organizational and tactical adjustments may be necessary when operating in forested areas. These may include:
 - (1) Increased security at all levels, to avoid surprise.
 - (2) Stricter control of movement and allocation of routes.
 - (3) Decentralization of armoured resources.
 - (4) Decentralization of combat support assets.
 - (5) Decentralized reserves held well forward.
- b. **Organization for Defensive Operations.** The main effort should be directed against the most likely enemy approaches although the defender must be organized for all round defence to avoid being outflanked or bypassed.
- c. **Organization for Offensive Operations.** Initially forces will be echeloned in depth on a narrow front, preceded by combat reconnaissance operating on a wide front to identify enemy locations and possible axes of advance. Where possible, forests of limited depth should be penetrated by one attack. In extensive forests, the attack will be launched to seize a succession of short-range intermediate objectives.

1220. **Planning.**

- a. **The Defence.** Planning must take into account that ground reconnaissance, particularly at lower levels will require more time than in open terrain. Attention must be paid to the road/track network, clearings, and the depth of the forest, all of which will influence the selection of positions. The defender should consider the following factors in his planning:
 - (1) **Positions.** The bulk of the positions should be established away from forest edges because they attract fire and observation. If available, armoured troops should be located forward of the forest edge. By contrast, non-armoured troops will, in general, be positioned far enough into the forest so that the enemy is unable to carry out an attack with tanks or to support an attack with observed fire from his heavy weapons. Forces must be positioned so that they are capable of all round defence and, where feasible, of achieving mutual support.

- (2) **Armour.** Even though there will be limitations to their effective range, armoured elements should be used where adequate fields of fire are available. This may necessitate the splitting of some of the armoured assets into small elements so as to cover roads, firebreaks, etc. Positions within the forest should be selected to deal with enemy penetrations and these positions may provide a base from which mobile operations can be mounted. The most effective use of armour as a reserve is to hold it to the rear of the forest, sited in such a way that enemy armour can be destroyed as it leaves the wooded area. Small parties equipped with anti-tank weapons should make the fullest use of woods to disorganize and inflict maximum casualties on the enemy armour.
 - (3) **Gaps.** In forests, it is difficult to control gaps between defensive positions. When gaps have to be accepted, they should be where there is little likelihood of an enemy attack, because of the nature of the terrain or because they can be easily obstructed, or interdicted by observed fire. Surveillance of gaps will be enhanced by patrolling, outposts and the use of ground sensors.
 - (4) **Barriers and Obstacles.** The defender should exploit the numerous opportunities that forests provide to prepare barriers. Obstacles are particularly useful in impeding a frontal assault or an attempt by the enemy to bypass the defence and advance through gaps. They may also be used to set an ambush. At the same time, the manoeuvrability of the defending forces in order to counter-attack or withdraw should not be impeded.
- b. **Delaying Operations.** The nature of forested areas makes them effective for use in delaying operations. Also, unlike open terrain, they provide good opportunities to employ non-armoured forces to execute delaying operations. Delaying forces usually focus their efforts on areas which the enemy is likely to use to make quick and deep penetrations (roads, tracks and firebreak areas). Coordination between the different elements of the force involved in the delay is more difficult. It requires careful control to prevent elements from being cut-off or bypassed.
- c. **The Attack.** The following points are important when planning an attack.
- (1) **Task Organization.** Forests make reorganization during battle difficult and time consuming. The initial task organization should be suitable for the whole operation and changes should be kept to a minimum.
 - (2) **Reserves.** These will generally follow closer to the attacking forces than they would in open terrain in order to swiftly exploit any success achieved and to rapidly counter surprise actions by the enemy.
- d. **NBC Effects.** In planning forest operations the following specific NBC effects must be taken into consideration:
- (1) **Blast.** As a result of blast, tree blowdown will considerably hamper all types of troops, although the radii of damage from the blast of nuclear weapons may be considerably reduced.

- (2) **Thermal Radiation.** In forest areas the effects of thermal radiation on personnel will be considerably reduced. However, the fire hazard will be considerably greater.
- (3) **Chemical Agents.** If chemical agents penetrate the tree canopy dispersion of the agent will be reduced and the duration of the hazard will be increased.

1221. **Execution.**

a. **Conduct of Defensive Operations.**

- (1) **General.** During the battle, the commander's ability to exercise control is more restricted than in other environments; subordinate commanders must expect to conduct operations independently.
- (2) **Security.** As the effectiveness of reconnaissance equipment and forces is restricted in forests, there is an increased requirement for security elements. Consequently, the defending forces must always be prepared for enemy elements appearing unexpectedly.
- (3) **Cohesion.** A major consideration is the maintenance of cohesion of the defence. Wherever possible, positions should be selected which offer all round defence and mutual support. Maintenance of cohesion will depend on holding these positions; giving them up involves the risk of losing contact with adjacent forces and of creating gaps which are not easily closed. If the enemy succeeds in overrunning or bypassing a position, commanders at the lower level must react immediately to restore the situation. The same principle applies to situations when the enemy attacks in areas which are only kept under surveillance.
- (4) **Counter-Attacks.**
 - (a) Counter-attacks will be undertaken by local reserves, as quickly as possible, to prevent the enemy from consolidating his penetration. Counter-attacks with armoured forces will generally be restricted to sectors of terrain where observation is good and manoeuvre is possible.
 - (b) Should the enemy succeed in achieving a penetration into the defence area, elements still in position must be prepared to move to attack the enemy flanks, exploiting the opportunities offered by the forest.

b. **Conduct of Offensive Operations.**

- (1) **General.** It will be impossible for the commander to plan in detail what would be possible in open terrain, because the overall picture of the terrain and the disposition of enemy forces will be incomplete. Much will depend on the results of the initial phase of the battle.
- (2) **Reconnaissance.** Reconnaissance in forests is difficult and time consuming. Air photographic reconnaissance and detailed ground reconnaissance prior to the

operation will be of increased importance. Since in many cases, complete reconnaissance results may not be obtained beforehand, and since a wide variety of surprise actions by the enemy must be expected, the attacking troops will be forced to employ security/reconnaissance elements forward and to their flanks.

- (3) **Direction of Attack.** The general direction of attack is governed primarily by the existence of routes. Even though they are where strong enemy defences may be expected, such routes must be cleared to allow all elements of the attacking force to move.
 - (4) **Commitment of Forces.** The commander conducting offensive operations in forests must not commit the bulk of his forces too early, particularly since redeployment of forces is time consuming and difficult in this type of terrain.
 - (5) **Initiation of the Attack.**
 - (a) Where an attack is launched against the edge of a forest initially, the forces employed should include armoured or anti-tank forces to neutralize the enemy's observation elements, armour and anti-tank weapons.
 - (b) The attacker should seek to pass through the defences along the edge of the woodland as quickly as possible. For penetration into the forest, infantry will generally be employed to continue the attack, passing through and pushing ahead of the armoured elements.
 - (6) **Fighting Through the Forested Area.**
 - (a) When attacking through a forest, the leading elements will try to avoid roads, tracks, and fire break areas which will normally be blocked by the enemy and covered by fire.
 - (b) Enemy positions should be bypassed using gaps, attacking them from the rear and subsequently continuing to advance deeper into the enemy-held area. This can also be achieved by infiltration. If neither method is feasible, the forces should be concentrated and launched in a deliberate attack.
 - (c) **Reorganization.** If it is intended to continue the attack beyond the forest, combat forces should be reorganized for this purpose while still under cover of the forest. Terrain permitting, the forces should attack from the forested area on a wide frontage, using the cover provided to achieve surprise.
- c. **Conduct of Delaying Operations.** As delaying operations in forests will generally be conducted in the form of a temporary defence, the provisions given in paragraph 620.a apply.

1222. **Employment of Combat Support Forces.**

- a. **Artillery.** While the normal principles of indirect fire support apply to operations in forests, the deployment of artillery and mortars will be limited by the nature of the terrain. In addition,

artillery and other fire support means are hampered by the lack of gun positions and of survey, the difficult of locating targets and the lack of observation of fire. Trees affect the ability to shoot at low angles and also cause premature detonation of projectiles. Observers should be assigned to forward elements and frequently fire will have to be controlled by sub-unit commanders. It will often be necessary to deliver unobserved fire.

- b. **Air.** Target acquisition is difficult and so most target marking and control of close air support will be by airborne forward air controllers. Because of the difficulties of employing close air support, the bulk of the air resources will be directed on targets in depth.
- c. **Air Defence.** Air defence should be concentrated on roads, tracks, clearings, exposed river crossings, and other choke points.
- d. **Engineers.** The demand for engineers to deal with additional mobility and countermobility tasks, in forest operations, is greater than in open terrain. All roads and track networks must be continuously maintained and, where possible, improved in order to enhance movement forward, rearward and laterally. Engineer support may also be required for the construction of landing zones, drop zones and artillery firing positions.
- e. **EW.** Correct siting of EW assets will be especially important due to the dense terrain.

1223. **Command and Control.** In forests, liaison, communication and coordination will be more difficult and will require more resources. The command and control measures outlined in Chapters 4, 5 and 6, for the offence, defence and delay, assume an even greater importance for the effective control of these operations, when conducted in forests, and it may be necessary to decentralize control to a much lower level than normal.

1224. **Combat Service Support.**

- a. **General.** The provisions for CSS, outlined in Chapter 2, Section VI apply. However, the nature of the terrain will make it more easy for the enemy to interdict supply lines and attack rear area facilities. This will impose a requirement for additional attention to their security. Routes and choke points may also have to be secured and additional security forces provided for convoys.
- b. **Resupply.** Because main routes can be easily blocked, units and formations must be prepared to fight for prolonged periods without supply. This will involve the build-up and maintenance of forward stocks. Supply points and installations may have to be located further forward than normal. Resupply air, including the use of helicopters, may be an essential feature.
- c. **Medical.** Medical evacuation of casualties will be hampered by the lack of roads. Resources to hand carry casualties may be needed.

SECTION III OPERATIONS IN CONDITIONS OF LIMITED VISIBILITY**INTRODUCTION**1225. **General.**

- a. This section considers the effects of limited visibility on tactical operations and the steps that must be taken to overcome the problems created.
- b. Visibility will be affected by darkness, fog, precipitation and smoke. Technology has provided the means to partially offset the restrictions resulting from limited visibility.

EMPLOYMENT CONSIDERATIONS1226. **Characteristics.**

- a. The time of the change from night to day is known, however, changes in visibility due to weather or to the unexpected use of smoke normally cannot be predicted. The time at which the fog lifts may be forecast or be standard in the area for the time of year.
- b. Reduction of visibility will have the following effects on operations:
 - (1) **Psychological and Physiological.** Individual performance will be degraded by increased physical and mental stress. The result may be increased apprehension and fatigue, which will erode combat effectiveness.
 - (2) **Weapons.** The effective ranges of weapons will be reduced. In darkness, muzzle flash may reveal the location of weapons, however, fog and smoke will reduce the signature produced by them.
 - (3) **Surveillance and Target Acquisition.** The recognition and location of targets and the identification of forces will generally occur at much shorter ranges. Dazzle may affect the human eye and some surveillance devices.
 - (4) **Movement.** Navigation is more difficult and the speed of movement is reduced.
 - (5) **Work Rate.** Many typical battlefield tasks, including NBC survey and decontamination activities, will require additional time. On the other hand conditions of limited visibility will provide concealment which will make tasks easier to complete.
- c. The impact of the effects outlined above, can in part, be offset by equipment, training, special techniques and planning. It should be borne in mind that they also affect enemy operations and this may be put to advantage.

1227. **Concept.**

- a. Under these conditions, ingenuity and foresight are required to make the best use of all the assets available. Forces must be able to carry out all operations under conditions of limited

visibility and to exploit these conditions to the full.

- b. Modern equipment and thorough training can provide the ability to carry out operations under conditions of limited visibility almost as well as in clear daylight. The situation will almost certainly lead to a condition of continuous operations, placing a more severe demand on human endurance and combat service support.
- c. In general the normal organization of forces will remain unchanged. Surveillance effort will need to be intensified and careful consideration will have to be given to the use of battlefield illumination. Unexpected changes in the conditions of visibility may require an adjustment of the original organization.

1228. **Technical Aids.**

- a. **General.** In order to overcome the problems of limited visibility, it is essential that surveillance aids are used correctly. Aids vary in their effectiveness in differing conditions of visibility.
- b. **Types.** There are two types of devices, active and passive:
 - (1) **Active Devices.** Active devices radiate energy which is then reflected from the target. Such devices are:
 - (a) Visible light emitters, including flares and search lights.
 - (b) Active infra-red emitters.
 - (c) Radars.
 - (d) Lasers.
 - (2) **Passive Devices.** Passive devices use the reflected incident or emitted energy from the target. Such devices are:
 - (a) Daylight optical instruments.
 - (b) Image intensifiers.
 - (c) Low light-level television.
 - (d) Thermal imagers.
 - (e) Remote control sensors.
 - (f) Infra-red receivers.
 - (g) Electromagnetic alarms.

- c. **Employment.** Active devices radiate energy and thus can be detected and located, passive devices generally cannot. At the beginning of an operation when the emphasis may be on covert movement and deployment to achieve surprise, passive devices are preferable. However, once contact has been made the most effective aids are likely to be the active ones. Depending on the situation, one type of device may offer significant advantages over others. Some are effective in absolute darkness but not in fog or smoke. Others operate effectively regardless of the amount of light available and can penetrate various obscurants. In choosing which of the available aids to use, the following should be considered.
- (1) The capabilities of the available devices.
 - (2) The use of devices in complementary roles.
 - (3) The limitations imposed by the illumination and surveillance plans.
 - (4) Whether the advantages to be obtained from using active devices are worth the possible security compromise involved.
 - (5) Enemy countermeasures.
- d. **Limitations.** Some of the devices have limitations and impose constraints for example:
- (1) Their field of view is less than that of the eye, so trained operators must be employed who are capable of interpreting the devices displayed.
 - (2) The limited number of devices available will require careful allocation, control and maintenance to achieve effective employment.
 - (3) Under certain conditions, particularly smoke, the effectiveness of some of these devices is seriously degraded.
- e. **Daylight Use.** Some equipments have capabilities exceeding those of normal daylight vision, for example:
- (1) Magnifying scopes enhance firing accuracy and target identification at longer ranges.
 - (2) Thermal sights can see through most smoke, haze and light foliage.

CONDUCT OF OPERATIONS

1229. **Planning.**

- a. The fundamentals of planning operations in limited visibility are similar to those of clear daylight operations but with particular emphasis on the following factors:
- (1) Plans must be kept simple. However, orders may need to be more detailed.

- (2) Sufficient time for reconnaissance is required for all levels, preferably in daylight.
 - (3) Reserves may be kept closer.
 - (4) Closer coordination with adjacent forces is required.
 - (5) Specific attention must be paid to noise and light discipline.
- b. **The Illumination Plan.** This is an integral part of the operation plan. It coordinates the use of technical aids/devices and includes rules for, and restrictions upon, the use of active devices. Once battle contact has been made these restrictions may no longer apply.
- c. **Defensive Operations.** The following factors should be considered in planning the defence:
- (1) Concealment of defensive positions will be easier by night, however:
 - (a) The possibility of detection by enemy devices must be taken into account.
 - (b) Concealment and camouflage must be such that they are still satisfactory when visibility improves.
 - (2) To avoid surprise by the enemy more reliance will be placed on reconnaissance and surveillance. More emphasis should be given to security, as warning time will be reduced.
 - (3) The enemy use of smoke may seriously degrade the effectiveness of guided weapons, neutralizing a part of the anti-tank defence. This can be compensated for by balancing the force with an appropriate mix of weapons.
 - (4) Identification will be more difficult and clear procedures must be laid down.
- d. **Delaying Operations.** Particular emphasis should be given to the following:
- (1) Surveillance of gaps between positions will have to be intensified.
 - (2) The increased opportunity for ambushes.
 - (3) The disengagement of the delaying forces may be easier, but will require more planning and coordination for the rearward passage of lines.
- e. **Offensive Operations.** The following factors should be considered in the attack:
- (1) Reconnaissance should be conducted in daylight, if possible.
 - (2) Rate of movement will generally be slower.
 - (3) Objectives should be easily identifiable. The distance to, and the width and depth of objectives may have to be reduced, and more intermediate objectives may be required.

- (4) Axes of advance should, if possible:
 - (a) Lead straight to the objective.
 - (b) Follow easily identifiable features.

1230. **Execution.**

a. **Defensive Operations.**

- (1) If long-range direct fire weapons are not equipped with night viewing aids, engagement ranges will be reduced. Visibility may be less than the minimum range for guided weapons, thus preventing their use.
- (2) There is a danger of being overrun by large numbers of enemy coming out of the obscurity at short-range. This calls for a quick and accurate response.
- (3) Technical aids should be carefully sited to cover likely approaches.
- (4) In the surveillance plan there is a need to cover gaps.

b. **Delaying Operations.** Limited visibility will enhance opportunities to surprise the enemy, conceal the strength of the force and assist in disengagement. As obstacles cannot be easily identified, they will be more effective and delay the enemy's ability to follow-up. On the other hand, it will not be possible to engage targets at maximum ranges.

c. **Offensive Operations.**

- (1) While the preparation and deployment of forces for the attack will be better protected than normal from enemy observation, control may be more difficult.
- (2) Maintenance of direction will be difficult, particularly over ground which may be poorly mapped and which has not been carefully reconnoitred. Movement may have to be slower and restricted to obvious roads and tracks in order to maintain direction and cohesion.
- (3) The force may use reconnaissance elements including guides to lead the advance and may delay deployment into the assault formation until the last possible moment.
- (4) If it is the aim to achieve surprise in the initial phase, the preparation for the attack will be completed with maximum attention being given to concealment. Noise will be kept to a minimum and there will be no preparatory artillery fire. Fire support should be planned for the whole operation but withheld until contact is made.
- (5) Reduced visibility will facilitate the use of infiltration techniques.

1231. **Employment of Combat Support Forces.**

- a. **Artillery.**
 - (1) Virtually all fire support means have a capability to provide battlefield illumination. This aspect requires a high degree of centralised control.
 - (2) Limited visibility restricts the observer's ability to acquire targets and adjust fire.
- b. **Air.** Air support may not be as effective or responsive. Increased reliance will have to be placed on integral fire support and ground reconnaissance.
- c. **EW.** Because of the increased use of technical aids passive EW systems will have more opportunity to detect and locate the enemy. Active EW systems can be used to jam or deceive enemy sensors.

1232. **Responsibilities of Command and Control.** The task of the commander during conditions of limited visibility is more difficult because of the effect of such conditions on orientation, surveillance and target acquisition, and morale. Emphasis must be placed on the initiative of subordinate commanders, close coordination, liaison and the employment of technical aids in complementary roles.

1233. **Combat Service Support.** CSS units must have the capability of performing their respective missions under conditions of limited visibility as a routine extension of daylight operations. Their goal must be to provide continuous support, including an increased requirement to provide support for the technical aids used during limited visibility operations.

SECTION IV OPERATIONS IN MOUNTAINS

INTRODUCTION

1234. **General.**

- a. This section describes the effects that mountainous terrain will have on the conduct of land operations and describes the doctrine and general procedures used.
- b. Mountainous terrain is characterized by a marked difference in elevation with steep slopes and valleys over an extended area. Weather conditions will also vary considerably over a small area. It may include built-up areas and plains between mountain ridges, plateaux, passes and the mountain sides themselves.
- c. Mountaineering techniques used by specialist troops are not covered in this section.

EMPLOYMENT CONSIDERATIONS

1235. **Characteristics.** The important military characteristics of mountainous areas are the following:

- a. Sharp differences in elevation provide excellent observation or may totally mask large areas of ground.
- b. The structure of the terrain will normally be such that it will follow a distinctive pattern or grain with the road and track network tending to follow the drainage pattern. This will have a major impact on manoeuvre as the bulk of the forces will be forced to operate with the grain of the country.
- c. The road network will be limited and cross-country movement in the higher regions will frequently be extremely difficult or impossible.
- d. The important built-up areas will be concentrated in the valleys.
- e. The higher elevation will frequently be exposed rock and any digging will be time consuming, requiring specialized equipment.
- f. The weather is normally unstable and changes very rapidly.
- g. Operations in mountainous areas are likely to be more exhausting for the troops involved, particularly for dismounted troops when moving.
- h. In many mountain areas there is forest cover, particularly on lower slopes. (See Chapter 11, Section III).
- i. Difficulty in communicating due to screening.

1236. **Concept.** Success in operations in mountains is usually achieved by the forces that gain control of key terrain, such as mountain and ridge tops, valley outlets, mountain passes, defiles and routes. Some of these will have a canalizing effect and can be controlled by forces on dominating heights around them. The battle for the heights will, therefore, be the governing factor in operations in mountains. Accordingly, they will be likely objectives in an attack and will be the key terrain on which the defence will be based. Due to the restricted mobility of ground vehicles, the use of helicopters for tactical mobility, reconnaissance, resupply and evacuation may have decisive importance.

1237. **Mission.** The mission given to any force operating in mountainous terrain will not differ from that normally assigned. It is the way the mission is accomplished that is different.

1238. **Capabilities.** Dismounted infantry can move almost anywhere in the mountains, provided they are properly prepared. Only infantry can seize and hold the vital high ground which dominates approaches. Often, small forces of company or even platoon size can stop or delay much larger enemy forces by occupying key positions on a pass or ridge. They are even more effective when they can call on the support of artillery and/or close air support.

1239. **Limitations.** The following limitations apply to operations in mountainous areas:

- a. The absence of sufficient roads, railways and airfields may restrict the size of the force that can be supported.
- b. In offensive operations the necessity to control the high ground to secure movement uses up a large number of dismounted troops.
- c. Normally armoured forces will be restricted to main axes, in the valleys, and may only be able to operate in small numbers.
- d. Because of the serious restrictions to movement, initial deployment and task organization cannot be easily changed.
- e. Terrain may often restrict mutual support.

CONDUCT OF OPERATIONS

1240. **Organization.**

- a. **Defensive and Delaying Operations.** The task organization of the force will be influenced by the terrain features. Elements should be capable of independent action for extended periods. The size of the forces allocated to specific tasks must allow for the local commander to form his own reserve. The practicability of a central reserve will be determined by the estimated response time for its deployment.
- b. **Offensive Operations.** Due to the nature of the terrain, self-contained task organizations must be set up. The forces required will be relatively greater than in operations in level terrain, in order to overcome the advantages enjoyed by the defender in mountainous areas. The ability of the commander to influence the battle will be enhanced if he has a centralized reserve which can be moved quickly, a task for which airmobile forces are particularly suitable.

1241. **Planning.**

- a. **Defensive Operations.** The following factors apply to defensive planning:
- (1) Dominant terrain provides the defender with good observation and firing positions but it will be difficult to achieve a completely cohesive position.
 - (2) The slopes and other terrain features will impose difficulties on the attacker.
 - (3) There are areas which may seem to be impassable or extremely difficult for ground forces to use, however, the ability of an enemy to overcome such obstacles should never be underestimated.
 - (4) The scarcity of roads places restrictions on the employment of tanks or other combat vehicles and makes them vulnerable.
 - (5) At smaller unit levels, a defender can deceive the enemy as to his exact strength, purpose and dispositions.
 - (6) It is difficult to move reserves quickly unless helicopter lift can be used.
 - (7) Considerable time must be allowed for the preparation of defence positions but this time can be reduced where permanent fortified positions already exist.
 - (8) Troops will require special clothing and equipment suitable to the environmental conditions in which they will be operating.
- b. **Delaying Operations.** The creation of obstacles along the restricted number of routes will be particularly useful in a delaying operation. Mountainous terrain can be used very effectively for ambushes. Flank security and continuous surveillance are essential to prevent enemy infiltration. Close coordination is required to prevent portions of the delaying force from being cut-off.
- c. **Offensive Operations.** Plans should be based on seizing the dominant terrain features as objectives. Early in the battle, particular effort may be necessary to capture vantage points for observation.
- d. **NBC Effects.**
- (1) **Nuclear.** Nuclear weapons can create special effects in mountainous areas which are difficult to predict. The blast effect can create obstacles which ground forces will only bypass with difficulty. Troops are highly vulnerable as they lack armoured protection and the strong protective shelters which can be prepared in level terrain.
 - (2) **Chemical.** On broken ground, vapours will flow downhill to accumulate in dips and hollows and persist longer. The unpredictable weather conditions which are characteristic in mountainous areas will make the effects of chemical agents harder to predict.

1242. **Execution.**

- a. **Defensive Operations.** The defence will be more static in nature and characteristically be conducted in a number of isolated actions. The advantages which the terrain offers the defender may allow for an extension of normal defensive sector width. It will be difficult for the defender to change the point of main effort.
- b. **Delaying Operations.** It may be easier to conduct delaying operations in this type of terrain as the enemy is restricted to a limited number of routes. The withdrawal route must be secured for the delaying force.
- c. **Offensive Operations.** The attacker is likely to meet the strongest resistance on the few available routes. He should avoid attacking the enemy from the front and obtain access to these routes by envelopment.

1243. **Employment of Combat Support Forces.**

- a. **Artillery.** Fire support, both artillery and mortar, must be planned well in advance as deployment and ammunition resupply in mountainous terrain is difficult and slow. The following factors are of special importance:
 - (1). **Mobility.** In some mountainous areas mortars or light guns which can be air lifted or manhandled into position may be the only means of fire support.
 - (2). **Terrain.** It will be difficult to find artillery firing positions. The terrain will degrade the usefulness of flat trajectory fire, including naval guns.
 - (3). **Observation.** Loss of visibility, due to weather conditions and the screening of areas by intervening high terrain will increase the difficulty of observation. To overcome this, it may be necessary to increase the number of observers or to use airborne observers.
 - (4). **Fire Effects.** Artillery fire may start landslides/avalanches. Swirling winds may reduce the effectiveness of smoke. The rocky terrain will increase the munitions effect on unprotected personnel.
- b. **Air.** The nature of mountainous terrain and the unpredictable weather conditions will complicate, or even restrict tactical air support of land operations. Within the operational limitations of terrain and weather, the following types of support will be of particular value:
 - (1). **Air ISTAR Operations.** Air and space ISTAR operations may be the only source of timely information on enemy activities screened by the terrain from other surveillance systems.
 - (2). **Counter Air Operations.** Friendly counter air operations will be of increased importance in obtaining protection of support routes into and within the area of operations.
 - (3). **Air Interdiction.** Because of the limited number of routes available there may be excellent opportunities for AI.

- (4) **Close Air Support.** Delivery of weapons onto targets on mountain sides or in the valleys may be difficult. CAS may be the only method available to attack targets on reverse slopes.
- c. **Helicopters.** Helicopters can greatly assist in overcoming the difficulties associated with the movement and support of ground forces in mountains. However, helicopters may have particular employment restrictions due to the weather and altitude. They may also be more vulnerable to air defence and small arms weapons placed on mountain slopes.
- d. **Air Defence.** The general principles of air defence remain unaltered. Problems which arise are:
 - (1) The selection of sites affording adequate radar coverage, particularly for the high to medium altitude air defence artillery.
 - (2) Access to the selected gun positions and radar sites.
 - (3) Local defence of isolated gun positions and radar sites.
 - (4) Ammunition resupply.
- e. **Engineer.** The following tasks are of particular importance in mountain areas:
 - (1) **Mobility.** Engineers may be required to provide support for the movement of supplies or casualties in very rugged terrain. Engineers must be well forward in combat formations to reduce obstacles such as washouts, craters, mines, landslides, and avalanches. New bridges may be needed to cross streams, replace weak bridges, and cross gorges. Construction of new tracks is a major engineering task requiring excavation and fill.
 - (2) **Countermobility.** Obstacles such as blocking roads and passes, destroying tunnels, and emplacing minefields are particularly effective in rugged terrain.
 - (3) **Survivability.** Irregular mountain terrain provides many opportunities for cover and concealment. Light engineer equipment transported by helicopter can provide valuable assistance in the protection of manoeuvre units.
 - (4) **Topographic.** Topographic engineers assist mountain operations by producing special terrain products and information on geology, weather effects, and mobility.
- f. **Electronic Warfare.** Siting and transportation of EW equipments must be considered as part of the competing priorities for real estate.

1244. Command and Control.

- a. **General.** Due to the nature of combat in mountainous areas, particular reliance must be placed on the initiative of subordinate commanders.

- b. **Command Facilities.** The positioning of command posts must be planned with special care because of the difficulties of redeployment and communications. Commanders and command posts must be prepared to be moved by whatever method is available and helicopters will be used extensively for the command and control functions. Command elements should be kept small and lightly equipped. To receive adequate protection they may have to be collocated with combat elements.
- c. **Communications.** High ground may screen radio signals and adverse climatic conditions may hinder efficient communications. A communications plan should take account of the following special factors:
 - (1) Communications will often depend on use of rebroadcast facilities and relay stations, which will require protection.
 - (2) The use of visual signalling in some situations.

1245. **Combat Service Support.**

- a. The normal provisions of combat service support apply in the mountains, although there will be a number of restrictions due to the difficulties of the environment, the probable lack of local resources and the vulnerability of supply routes.
- b. Factors influencing CSS are:
 - (1) The number and capacity of the roads, rail lines and other transport features.
 - (2) The amount of ground and cover available to set up combat service support facilities.
 - (3) The number and type of aircraft for air transport support.
 - (4) The security of routes from air attack.
 - (5) The availability of special transport, equipment and supplies.
 - (6) Adverse climatic conditions.
- c. The difficulties with the environment and vulnerability of routes will mean that medical units will have to be deployed with the forces and lines of evacuation should be short. Helicopters may be the only method of evacuating casualties and may have to be dedicated to this task.

SECTION V OPERATIONS IN ARCTIC AND COLD WEATHER CONDITIONS**INTRODUCTION**

1246. **General.** Operations in arctic and cold weather conditions demand special techniques, training and equipment. This section concentrates on outlining the doctrine for such operations during the winter season but also gives some guidance on operations conducted during arctic summer conditions.

EMPLOYMENT CONSIDERATIONS

1247. **Characteristics.** For military operations, the important characteristics of arctic/cold weather conditions are:

- a. Long hours of daylight in the summer and long nights in winter. (Arctic winter conditions, not applicable to all cold weather areas.)
- b. Extreme cold in winter, which effects the mind as well as the body.
- c. Snow and snow cover in winter.
- d. High winds which increase the windchill factor and may seriously reduce visibility.
- e. In large parts of northern areas there is a scarcity or total absence of road and rail networks. In winter, cross-country vehicles will offer increased mobility but for much of the arctic summer, ground movement, other than with specialized vehicles, may be impossible.
- f. The local resources available will be extremely limited due to lack of settlements.
- g. The disrupting effects of natural phenomena on communications, such as, auroral effects with atmospheric static.
- h. While some areas may be forested much of the area will be without tree cover.
- i. During arctic winter conditions, the weather is normally unpredictable and may change rapidly.
- j. Degradation and reduced effectiveness of vehicles, weapons and equipment, especially batteries, engines and POL products.

1248. **Concept.**

- a. Forces operating under arctic/cold weather conditions should be capable of conducting effectively all types of operations provided that they have received relevant and extensive training, although it should be understood that the execution of these will be exceptionally difficult.
- b. The critical aspect of operations in arctic winter or extreme cold weather conditions is that a force must be able to live and survive in the environment if it is to operate effectively against the enemy. Success will depend, to a large extent, on adequate training and equipment.

CONDUCT OF OPERATIONS

1249. **Organization.** Operations in arctic/cold weather conditions require a greater proportion of support units to maintain operational capability. Operations will normally be fought by small units and task organizations suitable for the entire operation should be established at the outset. It will be difficult to adjust these subsequently.

1250. **Planning.**

- a. The following factors are of particular importance in planning:
 - (1) **Weather.** Planning should take account of the likely weather conditions. Intense cold, high winds and storms may result in serious restrictions to visibility and mobility. Rapid change from dry cold to wet weather will pose particular problems to personnel.
 - (2) **Allowance for Time.** In extreme cold, practically every task requires more time to execute, and allowance for this must be made in planning. Individual preparation for an operation requires great attention to details, such as, clothing and equipment. Personnel operating in these conditions require additional time for rest and an increased intake of high calorie food.
 - (3) **Lines of Communication.** Because of the limited local resources in the Arctic, forces are even more dependent on their lines of communication than in the temperate zone. An enemy force may be defeated by severing its lines of communication and denying it the use of alternative routes or means of supply.
 - (4) **Shelter.** Planning must take account of the absolute requirement for shelter.
 - (5) **Cover and Concealment.** Under winter conditions it is impossible to dig in to permafrost or ice without specialized equipment or explosives. Over much of the area there will be little tree cover for concealment.
- b. **Offensive Operations.** These operations will be conducted generally in accordance with the fundamentals outlined in Chapter 4. The following additional factors should be noted:
 - (1) In extreme cold, separating enemy units from their combat service support will greatly reduce their effectiveness. Without food and fuel, survival will become difficult and the effectiveness of units will quickly deteriorate. Deterioration can be dramatically accelerated if the defending troops can be separated from their shelters or these can be destroyed by air, artillery or ground attack.
 - (2) Manoeuvre may at times be restricted by difficulties of weather and terrain.
 - (3) Due to widely dispersed zones of action, flanks and rear areas will frequently be lightly protected and present excellent opportunities to outflank or cut-off the enemy.
 - (4) Heavily falling snow, blizzards and fog may present excellent opportunities for surprise attack.

- (5) Whilst waterways, lakes and marshes are normally obstacles to an offensive operation, when frozen they cease to be obstacles and may provide good avenues of approach, even for heavy equipment.
 - (6) In arctic summer conditions, ground movement may be seriously hindered or even become impossible due to the water/mud/swamp conditions.
- c. **Defensive and Delaying Operations.** These operations are conducted in accordance with the fundamentals outlined in Chapters 5 and 6. The following factors affect planning:
- (1) Frequently, the limited number of troops committed will make it impossible to maintain a cohesive posture. Units must, therefore, be prepared to fight in isolation with all-round defence or to move to alternative positions.
 - (2) Airmobile forces will be particularly valuable in delaying operations.
 - (3) Seasonal changes will affect defence positions (eg, man-made obstacles may be made useless by heavy or melting snow).
 - (4) Because of the time taken and the special techniques involved to create obstacles on enemy approaches, greater reliance will have to be placed on other combat support elements in delaying and deterring the enemy.
 - (5) As there will be gaps in the defence, the enemy will be able to infiltrate elements which may attack support facilities and lines of communication. Special attention will, therefore, have to be paid to rear area security.
 - (6) The commander's decision on how to position his forces is particularly important because once deployed adjustments will be difficult.

1251. **Execution.**

- a. **Conduct of Defensive Operations.** Where the defender is unable to maintain his mobility, troops will be obliged to fight from their initial positions, conducting the defence from isolated locations. The deployment of observation posts may be necessary to monitor the gaps between positions and act as the prompt for the timely deployment of the relevant commanders reserves. Restrictions to mobility and the resultant slowness of reaction time may necessitate the decentralization of reserves.
- b. **Conduct of Delaying Operations.** Normal procedures apply, but particular emphasis must be given to advance preparations of any planned positions, and rearward movement. During the disengagement, troops should destroy any abandoned shelters that could otherwise be used by the enemy.
- c. **Conduct of Offensive Operations.** There are only short periods of daylight in the arctic winter and this means that movement in conditions of low visibility will become the rule rather than the exception. The following also apply:

- (1) To achieve surprise, envelopment and infiltration will be frequently used, taking advantage of gaps between enemy positions.
- (2) Airmobile operations should be considered as normal.
- (3) After seizing an objective there must be immediate consolidation. The assaulting dismounted troops may be exhausted, overheated and sweating from the exertion of the attack and provision must be made to prevent them from becoming cold casualties.

1252. **Employment of Combat Support Forces.**

- a. **Artillery.** Artillery and mortar impact rounds are less effective in arctic/cold weather conditions, because of the smothering effect of deep snow and mud. More use should, therefore be made of air-burst techniques. Because there is little cover, artillery firing positions will be vulnerable.
- b. **Air.** ASFAO may be particularly effective because of the lack of cover for enemy forces. Attacks on the enemy supply system may be particularly beneficial.
- c. **Helicopters.** Helicopters are usually able to operate in worse weather and visibility than fixed wing aircraft and helicopter landing sites will always be more easily prepared and cleared than runways. Likely tasks include:
 - (1) Movement of guns, artillery ammunition and AD weapons.
 - (2) Casualty evacuation.
 - (3) Troop lifts.
 - (4) Positioning of rebroadcast stations.
 - (5) Movement of engineers, mining and demolition parties.
 - (6) Urgent resupply.
 - (7) Reconnaissance.
- d. **Air Defence.** The lack of cover and concealment will normally necessitate maximum air defence measures.
- e. **Engineers.** The following tasks are of particular importance in arctic regions:
 - (1) **Mobility.** On frozen ground with minimal snow cover, units can achieve excellent mobility. Marginally frozen soils, tundra, and thin frozen crust rapidly break down under traffic, reducing mobility. Engineer snow removal may be critical during heavy snowfalls. Float bridging and rafting operations are difficult or impossible across frozen rivers and streams. Ice bridges may be constructed at temperatures below - 12 degrees celsius. Countermine operations are different in winter environments due to frozen mine fuses

and loss of mine detector effectiveness. Hard, wind packed areas can generally be made usable for ski-equipped aircraft.

- (2) **Countermobility.** If a thaw occurs, many areas of previously solid ground will be unusable by vehicles. Ice routes over waterways may be closed by demolitions or artillery. More time must be allowed for preparation of obstacle systems in cold temperature. Arming conventional mines is difficult in freezing weather. Minefields emplaced before a snow cover forms can become neutralized by snow, depending on snow depth and density. By summer, minefields laid in snow will stand revealed, deep mud may replace formerly firm ground and the defences of winter may have become untenable.
 - (3) **Survivability.** Constructing fortifications and protective positions in frozen ground is difficult. Heavy earthmoving equipment requires longer to dig in frozen ground. Expedient techniques can be used to build above-ground positions using snow. If compacted, snow will stop slow projectiles and fragments.
 - (4) **Topographic.** Topographic engineers assist arctic operations by producing special terrain products and information on geology, weather effects, and mobility.
- f. **EW.** The principles of employment of EW remain unchanged. EW resources, both active and passive, will continue to be very effective in this environment.

1253. **Command and Control.**

- a. **General.** The emphasis will be on small unit operations, with particular reliance on the initiative of lower level commanders.
- b. **Command Facilities.**
 - (1) Consideration must be given to good mobility for command post and control facilities. If the terrain permits, vehicles and mobile shelters are best for this.
 - (2) The use of aircraft for command, reconnaissance, liaison and communications relay will be valuable in covering the distances involved and will greatly assist in overcoming reduced ground mobility and the lack of navigational aids on the ground.
- c. **Communications.** Primary reliance must be placed on communications because of the great dispersion of ground forces and the difficulty of ground movement. In arctic conditions, high frequency transmission and reception, while capable of spanning the extended distances dictated by tactical requirements, are subject to interference from magnetic storms, aurora borealis, and ionospheric disturbances. These may completely black-out reception for hours, or even days. Low frequency transmissions are also affected by auroral disturbances but to a lesser degree and they, therefore, constitute an essential back-up to other radio means.

1254. **Combat Service Support.**a. **General.**

- (1) Success in combat operations in arctic/cold weather conditions is particularly reliant on adequate support plans and their proper execution. Particular attention must be paid to the requirements for personal survival.
- (2) The weather and terrain conditions make the problems of supply, recovery, evacuation, transportation and maintenance more difficult and time-consuming. Time and space factors vary with the terrain, and season. Distance is often measured in time rather than space and commanders must issue orders early to allow preparation for adequate support.

b. **Supplies.**

- (1) Planning must take into consideration the changing requirements for the various seasons.
- (2) Pre-positioning of stocks to support operations will often be required.
- (3) Construction of separate supply routes in support of small dispersed forces may be uneconomical. Therefore, cross-country transport vehicles and aircraft are used to move supplies and equipment to combat forces. In summer time, natural waterways may be used.

c. **Maintenance.**

- (1) Maintenance of equipment consumes a large proportion of the total work effort of any force in the Arctic. Maintenance requirements increase because of the long distances involved, the heavy strain of cross-country movement on equipment, the lack of roads and railroads. These increase vehicular and aircraft requirements, and the greater quantities and types of equipment needed in this environment. The effects of terrain and weather requires an increased repair effort.
- (2) Heated shelters and heating equipment should be provided for maintenance facilities, and, in some cases, for storage. Heaters are often essential in order to get vehicles and aircraft started.

- d. **Medical/Evacuation.** The effect of the environment on casualties increases the need for treatment, immediate evacuation and hospitalization. Because of the need to keep casualties warm, medical sub-units deployed close to the combat area will not be able to accept the temporary overloading of their facilities that is possible in temperate climates. For evacuation, use must be made of all forms of transport available.

SECTION VI DEFENCE OF COASTAL AREAS

INTRODUCTION

1255. **General.** This section covers tactical operations connected with the defence of coastal areas but dealing only with those operations prior to and during the initial stages of an enemy amphibious landing in a coastal area. Friendly operations against a secured beachhead or countering the enemy's advance inland, will follow the lines discussed in the chapters on offensive and defensive operations.

EMPLOYMENT CONSIDERATIONS

1256. **Enemy Concept.**

- a. The immediate aim of an enemy amphibious landing will be to establish a beachhead ashore and then to strengthen and develop it quickly, so that offensive operations can be launched and sustained from it. He will normally support the operation with airmobile or airborne action to seize objectives in depth. To achieve his aim he will seek to:
 - (1) Achieve at least local air and naval superiority in the amphibious objective area before the amphibious force enters it.
 - (2) Have the capability to build up strength in the beachhead faster than the defending forces can be concentrated against it.
 - (3) Isolate intended landing zones.
- b. The enemy will be more vulnerable during the landing phase than after he has been able to establish a foothold ashore.
- c. In selecting an area for amphibious operations the enemy will consider the following:
 - (1) **The Sea Approach.** The attacker will wish this to be clear of obstacles and to present no navigational hazards which would make it less suitable for an amphibious assault.
 - (2) **The Coast.** A wide beach with a suitably graduated slope which could be used by enemy assault craft is the most likely landing area; beaches which have poor exits with narrow beaches, infirm going or steep cliffs are less attractive to the attacker.
 - (3) **The Inland Area.** The attacker will wish to deploy inland quickly; he will be looking for suitable routes.

1257. **Mission.** The mission of the land force commander will be to prevent the enemy from establishing a beachhead in his area of operation.

1258. **Capabilities.** If a commander has made an accurate estimate of the situation he will have arranged his defences and deployed his reserves so that he is poised to meet the enemy assault and to deal the enemy forces a very severe blow at a time when they are most vulnerable. The defeat of an amphibious landing may have very far reaching effects on the whole enemy strategic aim.

1259. **Limitations.**

- a. The accuracy of a commander's planning will depend upon the quality of the intelligence he has received. In the absence of a land-based covering force he will be especially reliant on strategic intelligence and on seaborne and airborne sources and agencies for early intelligence of a threat.
- b. Coastal defence operations are extremely demanding in manpower, engineer effort and time.

CONDUCT OF OPERATIONS1260. **Organization.** Coastal defence consists of two major components:

- a. **Seaward Defence.** This comprises naval and air operations to counter a hostile naval or amphibious threat. The defence will be executed by naval and air forces supported by all available artillery. They will observe, report and engage the enemy in order to inflict maximum casualties and to disorganize his forces, thus imposing a delay and gaining time for the organization of the shore defence. The most desirable objective is to destroy the enemy task force while it is at sea.
- b. **Shore-based Defence.** A defender will not be able to establish himself in strength all along the coastline. The defence should be concentrated around key terrain and most likely landing sites, with other areas along the coast being kept under surveillance. Friendly forces must be deployed with the following aims:
 - (1) To destroy the enemy on the beaches.
 - (2) To permit rapid and flexible concentration of mobile reserves to destroy enemy landings before a beachhead is established.

1261. **Execution.**

- a. **Barriers.** Barriers should be used extensively offshore, on beaches and inland to deny suitable landing sites to the enemy, to assist in reducing the strength of enemy landing units and in complicating their tasks. The barrier plan must be carefully coordinated at the highest level and must be tied in closely with the plan for fire support.
- b. **Concentration of Force.** The success of the defence will depend on the ability to concentrate a superior force against an enemy landing. Thus the key factor is the deployment and use of reserves.
 - (1) Reserves should be strong and mobile, deployed inland and prepared to strike against enemy landings in the coastal belt. The mobility of the reserve must be ensured by the inclusion of air defence artillery and barrier crossing equipment. Any counter-attacks must be given all available fire support.
 - (2) Particular attention must be given to enemy airmobile/airborne force landings inland. These should be isolated temporarily so that troops may concentrate on the main threat.

It is particularly vital that the enemy is denied access to high ground, choke points and other key terrain from which he can control our movements, deny air freedom of manoeuvre and direct fire support. Such areas should be identified, and part of the reserve may have to be deployed there.

- c. **Air Superiority.** If local air superiority can be established, it will enhance the defence.
- d. **Preparation of Defences.** During the preparation phase, there will be a requirement for a considerable amount of engineer support to prepare the defensive positions. Because of the type of work involved, there will be a need for additional manpower and construction effort.
- e. **EW.** Coordination of the employment of land, air and naval EW assets must be effected.

1262. **Command and Control.**

- a. **Joint Command.** A joint command of all land, air and naval resources should be established. Where this is not possible, close liaison and direct communications between separate service headquarters will be essential.
- b. **Responsibilities.** Command of the shore-based defence is normally exercised by the land force commander and extends to include the defensive naval and air installations in the area of operation. He coordinates all resources in defence of the area. The responsibility for conduct of the seaward defence will normally rest with the naval force commander.
- c. **Coordination.** Special attention must be given to coordination with the seaward defence.
- d. **Intelligence.** The ability to react quickly to enemy landings depends upon early warning and accurate information about enemy movements. Surveillance and defence of coastal areas must be coordinated between naval, land and air forces, and intelligence must be shared.

1263. **Combat Service Support.** In general, the principles of CSS for defensive operations apply in the defence of coastal areas. Because of the uncertainties of this type of defence, there will be a heavy demand on combat supplies and a requirement to maintain a high level of mobile stocks.

**SECTION VII OPERATIONS IN DESERT AND
EXTREMELY HOT CONDITIONS****INTRODUCTION**1264. **General.**

- a. This section describes the effects that desert terrain and extremely hot conditions will have on the conduct of land operations and describes the doctrine and general procedures used.
- b. Operations in desert and extremely hot weather conditions demand special techniques, training and equipment.

EMPLOYMENT CONSIDERATIONS

1265. **Characteristics.** The important characteristics of desert and extremely hot conditions affecting military operations are:

- a. The desert is harsh; living conditions can be extremely uncomfortable and the desert can easily kill unprepared troops. Troops operating in these conditions must be physically, mentally and professionally prepared to meet the challenge. They must also be properly acclimatized before starting full scale operations.
- b. Desert and extremely hot weather condition areas are similar in terms of environment and temperature, but differ in vegetation and terrain structure. Deserts are arid, barren regions and vary from high mountains to tracts of sand and salt marshes incapable of supporting normal life due to lack of fresh water. Populated areas are widely dispersed and centred around sources of water. Few roads and railways exist.
- c. In deserts temperatures can be extreme: in summer rising to between 50°C (122°F) and 70°C (158°F), and in winter falling to -45°C. The diurnal range may exceed 20°C.
- d. Extremely hot weather and desert can affect the normal movement of combat vehicles and the operation of weapons and communication systems.
- e. In desert visibility is often excellent allowing good observation and long fields of fire.
- f. Vegetation in desert is poor and camouflage will generally be by artificial means.
- g. On the rare occasions rain falls it is normally torrential. Flash floods occur and areas of dried up water courses (wadis) are very dangerous in these conditions.
- h. Desert winds can achieve hurricane force. Dust and sand suspended within them can make life almost intolerable, movement and maintenance very difficult and can severely restrict visibility.

- i. Extreme temperatures, dust, and sand will adversely affect the performance of equipment, increase maintenance and supply requirements, and decrease the efficiency of logistic support activities.
- j. The performance of forces operating in desert and extremely hot weather while wearing Individual Protective Equipment will be severely degraded.

1266. **Concept.** In the desert, operations will be conducted by armoured and mechanized forces and, on occasions, airmobile and air landed forces. Operations are likely to take place over a very large area and may principally be battles of manoeuvre, with the aim of concentrating sufficient forces to defeat the enemy. The ability to fight in such conditions will depend on what is logistically possible.

1267. **Mission.** The missions given to any force operating in desert terrain will not differ from that normally assigned. It is the way the missions are accomplished that may be different.

1268. **Capabilities.** Friendly forces employed in desert terrain for air-land operations may have long fields of fire and observation. In most deserts, the scarcity of large areas of defensible terrain may force the enemy to leave at least one flank open to attack by friendly manoeuvre forces, tactical air forces and artillery fire or mobile reserves. Large numbers of mines (ground and aerial delivered) may be used effectively against enemy forces eg in defensive operations. Additionally, friendly force capability to communicate and to perform reconnaissance, intelligence, surveillance and target acquisition tasks may be improved owing to improved line of sight.

1269. **Limitations.** The following limitations apply:

- a. In desert operations, manoeuvre units tend to consume greater quantities of combat supplies and spare parts than in temperate climates. Routine maintenance checks and servicing will also become much more important.
- b. Water supply is very important due to the lack of water sources and increased consumption.
- c. Camouflage and concealment of forces is difficult due to the lack of vegetation.
- d. Large sandy, flat operational areas hinder linear defence.
- e. A moving unit is more likely to be seen due to the dust created.
- f. Lack of roads, reference points for navigation, railways and hard going on tracks will tend to slow movement.
- g. High ambient temperatures have significant adverse affects on rotary wing aircraft lift performance resulting in reduced troop/cargo payloads. Also, blowing sand may reduce visibility to zero precluding the use of all rotary wing aircraft.
- h. Strong desert winds can force the grounding of helicopters.

CONDUCT OF OPERATIONS

1270. **Organization.** The organization of units under desert and extremely hot weather conditions is similar to temperate climate operations. Although armoured and mechanized task forces consisting of tracked vehicles, including an air mobile element, will be effective in this environment, the suitability of light wheeled vehicles, armoured or not, in sandy areas, is not to be underestimated. In order to maintain the operations as required, combat service support, primarily water supply and maintenance, is very important.

1271. **Planning.**

- a. **Deception.** Deception should be a planned part of all desert operations. Smoke can be used, dummy positions can be prepared, false radio messages transmitted and even dust clouds used to deceive the enemy.
- b. **Defensive Operations.** The basic fundamentals of defensive operations found in Chapter 5 apply to desert operations. Special attention, however, must be drawn to those environmental characteristics which impact on defence planning. Long range visibility, extended frontages, lack of easily defensible terrain, and multiple avenues of enemy approach all pose significant problems for the planner in desert operations. As a result the commander may take risks in the disposition of his forces forward in order to defend in depth and retain a large mobile reserve capable of reacting quickly to the threat. Emphasis must be placed on early identification of the enemy's main attack to allow for repositioning and concentration of forces in counter-attacks against the flanks of the enemy attack.
- c. **Delaying Operations.** Normal procedures apply, but particular emphasis is required on the timely reconnaissance and preparation of positions to the rear, and the maintenance of contact to avoid encirclement. Plans must include provision for alternate means of communications. Owing to the distances involved and constantly changing task or organization and deployment, passage of lines will be more difficult to coordinate and control.
- d. **Offensive Operations.** Attacks launched in desert and hot weather conditions will require comprehensive plans. In most deserts, the scarcity of large areas of defensible terrain means that the enemy flanks may be vulnerable. The attacking force should seek an exposed flank and attempt to manoeuvre around it into the enemy rear before the enemy can react and block the envelopment with mobile reserves. Successful offensive operations depend on bold, rapid manoeuvre, seeking a vulnerable enemy flank.

1272. **Execution.**

- a. **General Considerations.** The unlimited availability of ground and the generally good weather reinforces the widely accepted need for the all round security and mobility of a force and places emphasis on the need for constant wide ranging reconnaissance.
- b. **Conduct of Offensive Operations.**
 - (1) These operations are conducted in accordance with the fundamentals outlined in Chapter 4.

- (2) In the desert a moving unit is more vulnerable due to the lack of concealment. Therefore, reconnaissance forces should be deployed well ahead of the main body. Similarly, flank and rear protection are essential.
- (3) Close cooperation between ground and air elements is essential. Desert terrain is suitable for air-land operations as it allows broad envelopment and encirclement operations with armoured, mechanised and helicopter units. The disadvantages caused by the limited concealment can be decreased by surprise, rapid movement, suitable deployment of troops, communications security and deception techniques.
- (4) Objectives may include enemy forces, communication centres, supply points, water sources and key terrain features.
- (5) Night may be more advantageous for operations than daylight as darkness offers concealment, cooler weather and the ability to operate without air superiority.
- (6) Gaps in the enemy deployment should be identified and exploited.
- (7) As minefields and obstacles can be used by the defender to deflect the attacker onto ground of his choosing, the attacker must have engineer reconnaissance and equipment well forward if crossing or breaching is required.

c. **Conduct of Defensive Operations.**

- (1) These operations are conducted in accordance with the fundamentals outlined in Chapter 5.
- (2) The important defensive areas are ports, key logistic installations, roads, railways, water pumping stations, airfields, wells, mountain passes, and key terrain. The retention of desert terrain itself normally makes little difference to the final outcome of battle.
- (3) Aggressive manoeuvre at all levels is the best way to destroy large numbers of enemy without being destroyed in the process. It is rare to find positions where both open flanks of the defended area can be protected by natural obstacles.
- (4) As large operational areas hinder linear defence, depth is required with mobile reserves being available. Information on enemy concentration areas and axes of advance is essential.

d. **Conduct of Delaying Operations.**

- (1) These operations are conducted in accordance with the fundamentals outlined in Chapter 6.
- (2) In delaying operations good fields of fire allow engagements at the maximum effective range of direct fire weapons systems, and therefore disengagement before the enemy can begin to close on the defender's position. However, dust clouds raised by a moving force may make it necessary to disengage under cover of smoke and darkness. Even

a sand storm can be used to advantage. Field artillery, aircraft and attack helicopters can also be used to allow a ground manoeuvre unit to disengage and move rapidly to the next position. The problem of accurate navigation and the possibility of the enemy approaching from an unexpected direction requires that attention must be paid to communications, the identification of vehicles, routes and the coordination of movement.

1273. **Employment of Combat Support Forces.** The requirements for fire support are no different than in other conditions. The range over which operations may be conducted, however, means that a force operating in the desert will be heavily dependent on air support in particular. The adjustment of fire may be difficult.

- a. **Artillery.** The provision of artillery support for desert operations requires maximum flexibility at all levels. Depending on the nature of the operation, regimental deployments may be possible, however, batteries and even sections may have to operate independently in order to provide fire to the supported arms spread across wide frontages. Field artillery pieces must be as mobile as the force they are supporting. Crews must be proficient in direct fire and prepared to defend against ground attacks. Field artillery units employed in desert operations should be equipped with sophisticated survey devices. Target acquisition and determination of the coordinates of the target are difficult due to lack of reference points. Most adjustment is made by ground observers but air observers will be most useful. Since adjustment can be difficult and time-consuming an extra scaling of smoke natures should be considered when mounting operations. Weather conditions can change rapidly and so weather corrections must be recomputed frequently.
- b. **Air.** CAS is most important in desert warfare in view of the lack of concealment, relatively large areas of operations, and the mobility of forces employed by each side. It is easy to locate targets: visual observation is normally far superior to that in temperate climates, and ground movement more apparent. Air attacks may be handicapped by lack of covered approaches, but increased visibility permits stand-off engagement. Panels or other visual or electronic identification means may be used to assist in the identification of friendly forces.
- c. **Helicopters.** AH can make use of their maximum weapon engagement ranges in desert conditions because of the lack of ground cover. Manoeuvring enemy forces can often be detected at long ranges because of the same lack of cover. These two facts continue to make the use of helicopters as an air manoeuvre force especially effective in desert operations.
- d. **Air Defence.** The large areas of operation and good visibility are ideal for air operations. Forces fighting in the desert should be reinforced with more than the usual complement of air defence weapons. However, there may not be sufficient dedicated air defence systems to protect the force. All units must therefore include plans to counter enemy air attacks. Both active and passive measures are required. Owing to the suitability of desert for air operations, commanders must give careful consideration before moving from under the protection of their air umbrella.
- d. **Engineers.** Engineer operations in arid, barren desert regions pose special problems. Deserts contain fewer natural obstacles, but extreme temperature changes can hinder the use of engineer equipment. The following tasks are of particular importance in desert regions:

- (1) **Mobility**. Roads are usually scarce and primitive. Trafficability is poor in soft sand, rocky areas, and salt flat. Engineers assist manoeuvre by reducing slopes, smoothing rock steps, and bridging dry gaps. Expanded engineer reconnaissance capabilities are needed to identify routes, obstacles, and minefields. Construction of helicopter pads and landing strips are additional mobility tasks.
 - (2) **Countermobility**. Minefields and anti-tank ditches are the primary means of creating obstacles. Local materials for expedient obstacles are scarce.
 - (3) **Survivability**. Observation is excellent in the desert, but concealment is difficult. Armoured vehicle fighting positions are essential. Fortifications in sandy soils often require revetments. Use of existing rocks and gravel can be used for additional cover.
 - (4) **Topographic Support**. Topographic engineers assist desert operations by producing special terrain products and information on geology, weather effects, mobility, water resources.
 - (5) **Miscellaneous Tasks**. The destruction of water sources can reduce enemy efficiency to a degree that he becomes militarily ineffective. In withdrawal operations, water sources may be mined, booby-trapped, or contaminated but poisoning is forbidden by the Geneva Convention. The long term effect of destroying water sources must be carefully considered in view of their potential significance to friendly forces.
- f. **EW**. The principles of employment of EW remain unchanged but EW is particularly important in the desert for the following reasons:
- (1) Radio is the most important means of communications. It may be difficult to site antennae where they will efficiently cover the area of friendly forces and yet will not radiate to the enemy.
 - (2) It may be necessary to use air or ground relays during the hottest periods of the day as VHF (FM) radios can have their range degraded by as much as 50%.

1274. **Command and Control**.

- a. **Command Facilities**. The commander controls operations using a highly mobile command group located well forward. Hot weather conditions in the desert can sometimes reduce radio signal strength and create unforeseen blind spots. A commander should operate where contact can be maintained at least with forward units in critical places and with his Tactical Headquarters. In some cases it may be necessary to use aircraft for communications and as airborne command posts. Ground command posts must be well concealed and electronic counter measures (ECM), electronic counter-counter measures (ECCM) taken.
- b. **Communications**. Line is not used extensively except in rear areas. Radio remains the primary means of communications in desert operations due to the speed of movement and distances involved.

1275. **Combat Service Support.**

- a. **General.** The effects of the environment on equipment are severe, requiring increased levels of support to maintain a standard level of efficiency. Distances between units, and lines of communications are long. Extended lines of communication in desert operations means that tactical airlift may have to be used. However, this may be vulnerable and is uneconomical, particularly for resupply. The importance of CSS units make them primary targets. Manoeuvre units often consume greater quantities of combat supplies and spare parts than in temperate climates. It is generally necessary to move over greater distances and in more difficult conditions to accomplish similar missions.
- b. **Supply.** The absence of roads in forward areas, navigation problem, vulnerability of trains and supply installations to attack by ground forces or aircraft, sandstorms and wide dispersion, all impose time penalties on resupply operations. The essential mobility and freedom of tactical manoeuvre are totally tied to the ability of the logistic chain to supply manoeuvre units. Two alternatives are available: increase the rate of supply, which requires more vehicles, or prestock, which ties units to the stocked area. Some important supply considerations are:
 - (1) Every vehicle should carry 2 to 3 days supply of combat rations and sufficient water for the crews. Crew feeding is the norm.
 - (2) The temperature drop at night means that additional clothing and sleeping bags must be available.
 - (3) Estimates of ammunition requirements should reflect the level of operations that can be anticipated.
 - (4) Consideration must be given to the need for extra storage, transportation and processing of water.
 - (5) Helicopter lift capabilities will vary according to climatic conditions.
- c. **Maintenance and Recovery.** Equipment requires more frequent and careful maintenance than in temperate conditions to combat the effect of dust and the climate.
- d. **Medical Support.** Environmental sanitation measures must be taken into account. The following factors should be considered when planning medical support:
 - (1) The increased dispersion and large areas over which battles are fought will increase casualty evacuation times by vehicle. Consideration should therefore be given to using air resources for this task.
 - (2) The incident of illness from heat injuries and disease is higher than in temperate areas.
 - (3) Wounded and sick must be evacuated immediately.
 - (4) In order to treat patients properly, all medical treatment facilities should contain additional supplies of water.

CHAPTER 13

Operations in Enemy Controlled Territory

INTRODUCTION

1301. **General.** This chapter considers the employment of land forces in enemy controlled territory and the purpose and control of these operations. The types of operations considered are normally limited in size and scope and are special in nature. Although the forces employed may be delivered through the air, these operations should not be confused with full-scale airborne or airmobile operations.

SECTION I EMPLOYMENT CONSIDERATIONS1302. **Concept.**

- a. These operations may be conducted in conjunction with those of other forces, or independently, deep in enemy occupied territory without a direct link with another force. Their planning and execution must take account of who is responsible for the area of employment.
- b. They will be conducted with emphasis on mobility, evasion and surprise, where offensive action is required, or, on concealment and stealth, where the role is intelligence collection or target acquisition. The forces involved should not allow themselves to be contained by the enemy.
- c. In spite of careful planning and preparation, the pattern of operations is normally less predictable than that of any other combat action and so commanders will need extensive freedom of action.

1303. **Mission.**

- a. Forces operating in enemy controlled territory will normally be employed to support the achievement of operational objectives on behalf of the theatre level commander. It follows that such forces should not be employed on missions that have no operational significance.
- b. Forces may be given one or more of the following missions:
 - (1) **Information Reporting.**
 - (a) Target acquisition eg enemy HQs, reserves, weapons of mass destruction etc.
 - (b) Gathering information on enemy forces movements, strengths, dispositions etc.
 - (2) **Direct (or Offensive) Action.**
 - (a) Interdict enemy lines of communications.
 - (b) Attack enemy units and installations.
 - (c) Impede enemy command and control.
 - (d) Disrupt communications.
 - (e) Harrass enemy movement and CSS.
 - (f) Attack nuclear delivery means.
 - (g) Direct fire on important targets in the enemy area.

(h) Tie down enemy forces.

(3) **Resistance.**

(a) Assist in establishment of resistance movement in enemy controlled territory.

(b) Coordination of resistance and conventional forces operations (the synergy is important).

1304. **Deployment Considerations.** Urban areas may be suitable for such operations because centres of population can provide a source of support. However, careful consideration must be given to the impact of such an operation on the local population, since it is much more easy for the enemy to seal-off a populated area than a rural area and put pressure on the local population to cooperate. Alternatively, forests, difficult terrain, mountains and sparsely populated areas are very suitable for these operations.

SECTION II CONDUCT OF OPERATIONS1305. **Organisation.**

- a. **Size.** Forces conducting operations in enemy controlled territory will vary in size according to the mission they are to carry out. They will generally be composed of infantry, although specialized personnel may be included, depending upon the mission.
- b. **Selection of Personnel.** Operations in enemy controlled territory present a particular challenge to the troops employed in this type of operation. Commanders should have sound training, a strong will, physical endurance, and initiative. Soldiers should be physically and mentally strong and self-reliant. All must be highly skilled in the use of their weapons and equipment and have a high standard of training in combat survival and in resistance to interrogation. It is also an advantage to be able to use enemy weapons and equipment, and have a thorough knowledge of the local language, culture and geography.

1306. **Planning.**

- a. Operations must be coordinated with any friendly forces in the vicinity and with the headquarters that has responsibility for the area, especially when operations are conducted in close proximity to friendly main positions.
- b. The time necessary for preparation will also have to be taken into consideration. The forces deployed behind enemy lines will require time to reach their area of operations unnoticed and to establish themselves, depending upon whether they let themselves be bypassed by the enemy, infiltrate or are flown into the enemy rear area or use a sea approach. If the operation is conducted in combination with, or in support of, that of a main force, the preparation time required must be taken into account in the overall planning.
- c. Planning must always allow for the difficult stage of recovery of forces operating in hostile territory. This may be accomplished by:
 - (1) The forces making their own way through the enemy lines.
 - (2) Link-up with friendly forces after an attack.
 - (3) Evacuation by air and/or sea.
 - (4) Use of previously established escape routes.

1307. **Combat Support.**

- a. **Fire Support.** Depending upon its size and type, the force may have its own organic fire support. If not, the ability to give fire support will depend on the situation, the distances involved and the fire support available. CAS may be the only form of fire support available. Early joint coordination of such support is necessary.

- b. **Operational Assistance.** Engineers will frequently be an essential element of the force. Helicopters will often be required to assist in the deployment, resupply or recovery of the force. EW support may be crucial to insertion and extraction, and of value during offensive action. Forces operating in enemy controlled territory may also support the EW effort by the placement of unattended jamming equipment. Early joint coordination of EW support is required.

SECTION III COMMAND AND CONTROL

1308. **General.**

- a. Operations in enemy controlled territory should be conducted in close coordination with those being carried out by the main force. The closest liaison must, therefore, be established at all levels.
- b. If the operation is to be carried out deep in enemy territory, the mission and control of the operation may be given to a higher headquarters to which the force will report. If more than one unit is to operate within an area, it will be necessary to issue coordinating instructions and sometimes to establish a coordinating headquarters. This headquarters may be permanently established or only created for the specific mission.

1309. **Communications.** Long-range radio communications and tactical satcom are essential for the control of forces conducting operations in enemy controlled territory and may also be necessary to provide them with nuclear strike warning. If radio is used, communications security measures will be essential to avoid detection and these may include:

- a. Predetermined times for signal transmission together with a well varied frequency plan.
- b. High-speed transmission, to include where available, Data Entry Devices.
- c. The use of low-power transmitters in forward areas and sophisticated highly sensitive receivers at the base communications station.
- d. Placing radio transmitters away from the base or command post.

SECTION IV COMBAT SERVICE SUPPORT

1310. **Considerations.**

- a. Units operating in enemy controlled territory cannot expect normal CSS. They may have to rely on self sufficiency and, although there are increased risks involved, consideration must be given to obtaining some support from the local population. In this case, careful and intelligent planning is required to avoid the operation being compromised.
- b. Normally, air transport is the most effective method of delivering supplies to the forces and for evacuation of the sick and wounded. Should landing not be possible, plans should be made to airdrop supplies.
- c. Maximum use should be made of logistic intelligence to identify the existence of combat supplies; notably fuel, rations and water.

CHAPTER 14

Encircled Forces

INTRODUCTION

1401. **General**. This chapter considers tactical doctrine for the conduct of operations by encircled forces.

1402. **Scope**. The chapter will cover three types of activity:

- a. Defence conducted by encircled forces.
- b. Relief of encircled forces.
- c. Breakout of encircled forces.

SECTION I EMPLOYMENT CONSIDERATIONS1403. **Concept.**

- a. There may be times when a commander will have to accept encirclement of elements of his force. This will restrict the freedom of action, not only of the force concerned, but also of higher headquarters, and may indeed jeopardize the continuity of the operation. Cut-off and with a severely restricted supply system, the encircled troops will have to fight on their own. Their combat effectiveness may deteriorate rapidly and their morale may suffer, but nevertheless they must fight vigorously. This type of combat places particularly heavy demands on both commanders and troops and calls for a high standard of leadership.
- b. Particular operations are:
 - (1) **Defence Conducted by Encircled Forces.** The initiative will rest with the enemy and so the commander must provide security in all directions.
 - (2) **Termination of the Encirclement.** The encirclement will be terminated either by a relief, a breakout operation or by a combination of the two:
 - (a) **Relief of Encircled Forces.** The purpose of this operation is to break through enemy positions to reach an encircled force, thus restoring freedom of action.
 - (b) **Breakout of Encircled Forces.** This is where forces that are encircled take offensive action themselves to link-up with a main force.

1404. **Mission.** Once a force becomes encircled, the immediate responsibility of the overall commander is to consider whether the mission of the encircled force should be adjusted. The major factor will be his estimate of how long the encircled force will be able to fight on its own. Depending upon the importance of their mission, he must decide whether an outside force should launch a relief operation, or whether the encircled force should break out, in which case support from the main force or from the air may be required.

1405. **Characteristics.**

- a. The major characteristics of encircled forces, which distinguishes them from other operations, are that attacks may come from more than one direction and that support from outside becomes difficult, if not impossible.
- b. Because their exact location is known by the enemy, an encircled force is particularly vulnerable to attack by concentrated enemy artillery, air attack and, if the technical circumstances make it possible, by nuclear and chemical weapons.
- c. The encircled force may lose its ability to acquire sound and timely intelligence and superior commanders must provide such intelligence and pass it to them.

SECTION II CONDUCT OF OPERATIONS1406. **Organisation.**

- a. **The Defence.** As soon as a force is encircled it is important that organization takes place as quickly as possible to cater for the requirements of the new situation. This includes:
 - (1) Re-establishing a command structure.
 - (2) Organizing defensive sectors.
 - (3) Creating a reserve.
 - (4) Organizing fire support.
 - (5) Reorganization and consolidation of combat service support.
 - (6) Re-establishing communications.
- b. **Relief Operations.** The encircled force commander should prepare his force so that it can give timely support for any relief operation.
- c. **Breakout Operations.** These include:
 - (1) Designation of combat units of sufficient strength to conduct the breakout in the chosen direction.
 - (2) Provision of forces for protection and deception on the perimeter.
 - (3) Designation of fire support requirements for the breakout and for the remainder of the force.
 - (4) Organization of follow-on echelons, such as, combat support, combat service support and command elements.
 - (5) Designation of a rear security element.
 - (6) If it is determined that it is impossible for a force to fight its way out, then a breakout by stealth, exfiltrating through enemy territory, may be used. This will require a complete reorganization of the force.

1407. **Planning.**

- a. **The Defence.** The commander will determine the area that can be defended based on the troops available. He will arrange for:
 - (1) Likely enemy approaches to be identified and forces allocated to cover them.

- (2) Surveillance to be established to cover the whole perimeter.
- (3) A relatively strong mobile reserve to be established which can be rushed to locations that are exposed to the greatest threat.
- (4) All fire support resources available, from both inside and outside the perimeter, to be organized to counter threats from any direction.

b. **Relief Operations.**

- (1) Planning for relief operations is the responsibility of the overall commander.
- (2) As the combat ratio of the attacking relief forces to the enemy may not be as favourable as under normal attack situations, surprise is of paramount importance.
- (3) The plan must be coordinated with the encircled force, particularly in respects of time and space and of the need for maintenance of surprise.
- (4) The strength and composition of the relieving force will be influenced by plans for subsequent operations.

c. **Breakout Operations.**

- (1) The main weight of responsibility in planning breakout operations rests with the commander of the encircled force and any activities by the force in support of the breakout will be in response to his plan.
- (2) During the breakout, the requirement is to force a breach in enemy lines and to hold it open to allow the force to be extricated. Throughout the operation it is essential to maintain momentum, at the same time retaining the integrity of the entire force.
- (3) The point of breakout and the route of subsequent movement must be carefully selected. The most direct route may not be the best. Enemy weaknesses should be exploited and attempts made to avoid them by the use of less direct routes and of difficult terrain in darkness or poor visibility.
- (4) If no other alternatives exist, exfiltration might be carried out. If this is planned particular attention should be paid to:
 - (a) The organization of units and sub-units.
 - (b) Timings.
 - (c) Disposal of equipment and supplies.
 - (d) Arrangements for casualties and prisoners of war.

1408. **Execution.**

- a. **The Defence.** The defender must be able to react immediately with reserve forces and defensive fire on any approach. It will be difficult to identify the enemy's most likely point of main effort but any serious threat to the cohesion of the defence must be blocked to prevent the piecemeal destruction of the force.
- b. **Relief Operations.**
 - (1) Relief attacks mounted outside the encirclement are conducted in the same way as normal offensive operations; surprise and speed are particularly important.
 - (2) They will normally be conducted as a narrow thrust with the leading elements tasked to advance as quickly as possible while follow up forces secure the flanks to keep the corridor open.
 - (3) The encircled force will support the relief attack by fire and, if practicable, will attempt to divert or tie down enemy forces by carrying out local offensive actions.
- c. **Breakout Operations.** The encircled forces may have to be reorganized and careful preparations will be necessary.
 - (1) The breakout should attempt to surprise the enemy and will be similar to a deliberate attack.
 - (2) All-round defence must be maintained until the forces have created a breach. Once a breach has been created, the momentum must be maintained. Reconnaissance elements must be deployed to allow the commander to avoid strong enemy positions with the leading elements advancing as quickly as possible using the flank and rear guards for security.
 - (3) Combat support and combat service support elements will be integrated within the main body, for their security.
 - (4) The last elements maintaining the defence perimeter will normally disengage on order.
 - (5) If it is intended to exfiltrate through enemy territory, armoured forces may be used to make an initial breach or diversionary attack. The operation is only likely to be successful under suitable conditions of terrain and visibility.

1409. **Employment of Combat Support Forces.**

- a. **Artillery and Air.**
 - (1) **The Defence.**
 - (a) **Fire from Within the Position.** Firing positions must be selected to enable fire to cover all parts of the perimeter.

- (b) **Fire from Outside the Encirclement.** The forces outside the encirclement should aim to give the maximum fire support for the encircled forces, their fire tasks being coordinated with those from within the encircled force.
 - (c) **CAS.** This may often be the only way to provide additional fire power to the encircled force to which additional forward air controllers may be deployed.
- (2) **Relief and Breakout Operations.** In general the guidelines for fire support for encircled forces, however, the following additional points should be noted:
 - (a) **Armed Reconnaissance.** Armed reconnaissance along the routes of the relieving/breaking out force will provide valuable intelligence and will assist in reducing the enemy threat.
 - (b) **Fire Support.** During the breakout there will be a phase when organic fire support will be limited due to movement. This should be compensated for by providing fire support from outside the encircled force.
- b. **Helicopters.** Helicopters will be of considerable value in these operations because:
 - (1) They can lift critical combat equipment or personnel and provide combat service support.
 - (2) They will probably be the only means of medical evacuation.
 - (3) They can assist in repositioning forces.
- c. **Air Defence.** The restricted mobility of encircled forces makes them particularly vulnerable to air attack. They will, therefore, be disproportionately reliant on air defence. Any deficiencies in their organic air defence capabilities must be made up for by defensive counter air operations in the area.
- d. **Engineer.**
 - (1) **During the Defence.** The normal tasks for engineers apply, but with particular emphasis on counter-mobility. There will be an increased requirement for protective digging to increase survivability and a greater proportion of engineers may have to be retained in reserve in order to deal with unforeseen enemy threats.
 - (2) **During a Relief or Breakout.** Engineer emphasis is on mobility. Engineer support will be required to deal with enemy barriers and to make gaps in friendly barriers. During breakout operations, where possible, some engineer resources should be in the rear guard to carry out counter-mobility tasks.
- e. **EW.** Arrangements should be made to provide intelligence and jamming support from all available EW resources to augment those operating within the encircled area.

SECTION III COMMAND AND CONTROL

1410. **Command Responsibilities.**

- a. **Single Command.** The most important principle of command and control of encircled forces is that all forces within an encirclement must respond to the authority of a single appointed commander.
- b. **Higher Commander.** A main force commander who is responsible for the encircled forces must be appointed.
- c. **On Relief.** The command relationship between the encircled force commander and the relieving force commander must be clearly stated, including a time when it is to become effective.

1411. **Communications and Liaison.**

- a. Communications must be established for the command and control of all elements of the encircled force.
- b. Communications arrangements, including liaison, must also be effected between the encircled forces and the commander within the main body who has responsibility for the force.

1412. **Coordination.** The control measures used to co-ordinate this type of operation are covered in Chapter 7, Section III, Link-up Operations.

SECTION IV COMBAT SERVICE SUPPORT

1413. **Resupply**. Supplying the encircled force is the responsibility of the higher headquarters, but strict control of supplies within the encirclement will be necessary. Supply may be carried out by air if the situation permits.

1414. **Denial of Equipment and Supplies**. During breakout operations, all supplies and equipment which cannot be evacuated during the operation will be destroyed or rendered ineffective. If they cannot be evacuated, medical supplies and equipment must be marked as such and left, in accordance with the Geneva Convention.

ANNEX A

**RELATED ALLIED PUBLICATIONS (APS) AND
STANDARDIZATION AGREEMENTS (STANAGS)**

1. **General**

- a. NATO nations have concluded a wide range of agreements on various matters, and more are under negotiation. A selection of the more prominent is listed in the paragraphs below. AAP-4 contains a full list of APs and STANAGs.
- b. It should be noted that STANAGs (unlike APs) are not circulated direct to users. Their contents are included in national and command instructions (eg training pamphlets and Standing Operating Procedures).

2. **Other Operational/Tactical Doctrine**

- AJP-01(A) Allied Joint Doctrine.
- AJP-3 Allied Joint Operations.
- AJP-3.4 Non Article 5 Crisis Response Operations.
- AJP-3.4.1 Peace Support Operations.

3. **Tactical Procedures**

The following STANAGs cover general operational matters:

- STANAG 2082 - Relief of combat troops.
- STANAG 2129 - Identification of land forces on the battlefield.

4. **Headquarters Procedures**

- a. **Intelligence.** AJP-2.1 and AJP-2.2 contain NATO agreed intelligence and security doctrine and terminology. Procedures are contained in various STANAGs including:
 - STANAG 2022 - Intelligence reports.
 - STANAG 2033 - Interrogation of prisoners of war.
 - STANAG 2044 - Procedures for dealing with prisoners of war.
 - STANAG 2077 - Order of battle (non-NATO ground forces).

- STANAG 2084 - Handling and reporting of captured enemy equipment and documents.
- STANAG 2149 - Intelligence request.
- AJP-4.5 - HNS Planning Procedures.
- b. **Command and Control.** Procedures are contained in:
 - STANAG 1001 - Standardized system of designating days and hours in relation to an operation or exercise.
 - STANAG 2014 - Operation orders, warning orders and administrative/logistics orders.
 - STANAG 2020 - Operational situation reports.
 - STANAG 2101 - Establishing liaison.
 - STANAG 5048 - The minimum scale of communications for the NATO land forces requirements, principles and procedures.
 - STANAG 2036 - Landmine Laying, Marking, Recording and Reporting Procedures.
 - STANAG 2123 - Obstacle Folder.
 - STANAG 2394 - Land Force Combat Engineer Doctrine - ATP-52.
 - STANAG 2395 - Water Crossing Procedures.
 - STANAG 2885 - Emergency Supply of Water in War.
 - STANAG 2989 - Transfer of Barriers.
 - APP-6 - Military symbols for land based systems.
- c. **Airmobile and Helicopter Operations.** ATP-49 deals with the use of helicopters in land operations.
- d. **Air Support.** AJP 3.3 outlines NATO tactical air doctrine while ATP-27(B)/AJP 3.3.2 deals with air interdiction and close air support operations. ATP-40/AJP 3.3.5 deals with airspace control in the joint operations area, ATP-42/AJP 3.3.1 outlines the details pertaining to counter air operations and ATP-44/ATP-3.6.1 deals with electronic warfare in air operations.
- e. **Amphibious Warfare.** ATP-8 outlines the doctrine for amphibious operations. ATPs 36, 37, 38 and 39(A) deal with the more detailed aspects of amphibious operations.

- f. **Air Transport.** Among agreements relating to air transport are:

- STANAG 3146 - Planning procedures for tactical air transport operations.
- STANAG 3465 - Safety, emergency and signalling procedures for military air movement - fixed wing aircraft.
- STANAG 3570 - Drop zones and extraction zones - criteria and markings.
- ATP-53/ATP 3.3.4.3 - NATO air transport policies and procedures.

5. **Combat Support**

- a. **Artillery.** Agreed procedures and doctrine are in A Arty P-1 and A Arty P-5/ATP-3.2.4.

- b. **Engineer.** Agreed procedures are contained in a number of STANAGs including:

- STANAG 2017 - Orders to the demolition guard commander and demolition firing party commander (non-nuclear).

- c. **Other.**

- STANAG 2067 - Control and return of stragglers.
- STANAG 2113 - Denial of military equipment and supplies to an enemy.
- STANAG 2143 - Explosive ordnance reconnaissance/explosive ordnance disposal. (EOR/EOD).

6. **NBC**

- a. NBC procedures are contained in:

- STANAG 2002 - Warning signs for the marking of contaminated or dangerous land areas, complete equipments, supplies and stores.
- STANAG 2047 - Emergency alarm of hazard or attack (NBC and air attack only).
- STANAG 2083 - Commanders' guide on nuclear radiation exposure of groups.
- STANAG 2104 - Friendly nuclear strike warning.
- STANAG 2111 - Target analysis - nuclear weapons.
- STANAG 2133 - Vulnerability assessment of chemical and biological hazards.
- STANAG 2150 - NATO standards of proficiency for NBC defence.

- STANAG 2352 - NBC defence equipment operational guidelines.
- STANAG 2353 - Evaluation of the NBC defence capability.
- STANAG 2473 - Commanders guide on Low Level Radiation (LLR) Exposure in military operations.
- STANAG 2984 - Graduated levels of NBC threat and minimum protection.
- STANAG 2879 - Principles of medical policy in the management of a mass casualty situation.
- STANAG 2909 - Commanders guidance defensive measures against Toxic Industrial Chemicals.
- AJP 3.8 - Joint NBC.
- ATP-45 - Reporting nuclear detonations, biological and chemical attacks, and predicting and warning of associated hazards and hazard areas.

b. Medical aspects are covered in:

- AJP-4.10 - Medical Support Doctrine.
- A Med P-06 - NATO handbook on medical aspects of NBC defensive operations.
- A Med P-07 - Concept of operations of medical support for NBC environments.
- A Med P-08 - Planning guide for the estimation of battle casualties (nuclear).
- STANAG 2931 - Camouflage of the Geneva Emblem on medical facilities on land.

7. **EW**

ATP-51/ATP-3.6.2 deals with EW in the land battle.

AJP 3.6 deals with Joint EW

8. **Logistics**

a. Although logistics are a national responsibility, many agreements have been made to enhance logistic interoperability. They include:

- AJP-4 - Logistics.
- ALP-4.2 - Land Forces Logistic Doctrine.
- AJP-4.4 - Movement and Transport.

- AJP-4.6 - Multinational Joint Logistic Component.
- AJP-4.7 - POL.
- AJP-4.9 - Multinational Logistic Support.
- STANAG 2034 - Land forces procedures for allied supply transactions.
- STANAG 2087 - Medical employment of air transport in the forward area.
- STANAG 2135 - Procedures for emergency logistic assistance.
- STANAG 2827 - Materials handling in the field.
- STANAG 2109 - Postal organization and counter service for the NATO forces.
- STANAG 2176 - Procedures for military road movement across national frontiers.

b. Transfer of equipment and supplies is facilitated by the following catalogues:

- A Med P-01 - NATO table of medical equivalents.
- AOP-06 - Land forces ammunition interchangeability catalogue in wartime.

GLOSSARY

airborne

1. Applied to personnel, equipment etc, transported by air; eg, airborne infantry.
2. Applied to material, being or designed to be transported by aircraft, as distinguished from weapons and equipment installed in and remaining a part of the aircraft. (AAP-6 Parts 1 and 2 only.)

air supremacy

That degree of air superiority wherein the opposing air force is incapable of effective interference. (AAP-6.)

air superiority

That degree of dominance in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea and air forces at a given time and place, without prohibitive interference by the opposing force. (AAP-6).

amphibious force

A naval force and landing force, together with supporting forces that are trained, organized and equipped for amphibious operations. (AAP-6 Part 1 only.)

anti surface force air operations

Air operations conducted to deprive the enemy of the military power he needs to occupy territory or exploit seaspace by neutralizing, delaying or destroying his surface forces.

area of responsibility

A geographical area assigned to each NATO strategic command and to each regional level command in Strategic Command Europe.

armed helicopter

A helicopter fitted with weapons or weapon systems (AAP-6), including anti-tank weapons.

assault

1. The climax of an attack; closing with the enemy in hand-to-hand fighting.
2. A short, violent, but well-ordered attack against a small objective, such as a gun emplacement, a fort or a machine gun nest. (AAP-6 Parts 1 and 3 only.)

assembly area

An area in which a command is assembled preparatory to further action. (AAP-6 Part 1 only.)

assign

To place units or personnel in an organization where such placement is relatively permanent, and/or where such organization controls and administers the units or personnel for the primary function, or greater portion of the functions, of the unit or personnel. (AAP-6 Part 1 only.)

attack helicopter

A helicopter specifically designed to employ various weapons to attack and destroy enemy targets. (AAP-6.)

axis

In land warfare, the general direction of movement (planned or achieved) usually between assigned boundaries. (AAP-6.)

battery

Tactical and administrative artillery unit or sub-unit corresponding to a company or similar unit in other branches of the Army. (AAP-6 Part 1 only.)

bypass

Manoeuvring around an obstacle, position or enemy force in order to maintain the momentum of advance.

control

That authority exercised by a commander over part of the activities of subordinate organizations, or other organizations not normally under his command, which encompasses the responsibility for implementing orders or directives. All or part of this authority may be transferred or delegated. (AAP-6 Part 1 only.)

control point

A position along a route of march at which men are stationed to give information and instructions for the regulation of supply or traffic. (AAP-6 Part 1 only.)

convoy

A group of vehicles organized for the purpose of control and orderly movement with or without escort protection. (AAP-6 Part 2 only.)

defensive counter air

Alternative term for **air defence** (see AAP-6). See also **counter air operations**. (AAP-6.)

deployment

1. The relocation of forces to desired areas of operations.
2. The movement of forces within areas of operations.
3. The positioning of forces into a formation for battle. (AAP-6 Parts 2, 3, and 4.)

direction finding (DF)

The process of determining the bearing of an electromagnetic emission. (ACP 167(F).)

direction of attack (ground forces)

A specific direction or route that the main attack or centre of mass of the unit will follow.

direct support

The support provided by a unit or formation not attached or under command of the supported unit or formation, but required to give priority to the support required by that unit or formation. (AAP-6 Part 1 only.)

disposition

Distribution of the elements of a command within an area, usually the exact location of each unit headquarters and the deployment of the forces subordinate to it. (AAP-6 Part 1 only.)

encirclement

Situation in which a military unit/formation has been surrounded and isolated from their lines of communication resulting in loss of freedom of manoeuvre.

exfiltration

A technique or process in which a force withdraws as individuals, small groups or units over, through or around enemy positions while attempting to avoid detection.

fire support coordination line

A line established by a land or amphibious force commander to denote coordination requirements for fire by other force elements which may affect his current operations. The fire support

coordination line applies to fire of air, ground or sea weapons using any type of ammunition against surface targets. Within his assigned area of operations the land or amphibious force commander is responsible for establishing any fire support coordination line. The establishment of the fire support coordination line must be coordinated with the appropriate air commander and any other supporting elements. Attacks against surface targets short of the fire support coordination line must be conducted under the positive control or procedural clearance of the associated land or amphibious force commander. Unless in exceptional circumstances, commanders of forces attacking targets beyond the fire support coordination line must coordinate with all affected commanders in order to avoid fratricide and to harmonize joint objectives. (AAP-6.)

follow-on forces

All enemy ground forces not committed during their offensive operations to the contact battle, their command and control installations, and their logistic and other support provided for sustained operations. (ATP-3.2).

forces in depth

In all types of operation, all enemy forces not committed to the contact battle, command and control installations, and logistic and other support, located within a commander's area of influence. (ATP-3.2.)

fragmentary order

An abbreviated form of an operations order, issued as required, that eliminates the need for restaffing information contained in a basic operations order. It may be issued in sections. (PL 1040-001 ESN agreed.)

full command (FULL COMD)

The military authority and responsibility of a superior officer to issue orders to subordinates. It covers every aspect of military operations and administration and exists only within national services. (AAP-6.)

general support

That support which is given to the supported force as a whole and not to any particular sub-division thereof. (AAP-6.)

General Support Reinforcing

Gen Sp Rft artillery has the mission of supporting the forces as a whole and, on a secondary basis, of providing reinforcing fire for another artillery unit. (AArtyP-1.)

identification

The indication by any act or means of your own friendly character or individuality. See also **recognition**. (AAP-6 Part 1 only.)

in support of

Assisting or protecting another formation, unit or organization while remaining under original control. (AAP-6.)

interception

The art of searching for and listening to and/or recording communications and/or electronic transmissions for the purpose of obtaining intelligence. (ACP 167(F).)

interdiction

Action to divert, disrupt, delay or destroy the enemy's military potential before it can be used effectively against friendly forces. (ATP-3.2.)

local air superiority

Air superiority maintained for a specific time and space in support of a particular operation.

Marine Air-Ground Task Force (US)

A Marine Air-Ground Task Force is a task organization of Marine forces under a single command and structured to accomplish a specific mission. The Marine Air-Ground Task Force components will normally include command, ground combat, aviation combat, and combat service support elements (including Navy support elements). Four types of Marine Air-Ground Task Forces which can be task organized are the Marine Expeditionary Force (MEF), Marine Expeditionary Brigade (MEB), Marine Expeditionary Unit (MEU), and Special Purpose Force (SPF). Also called MAGTF. (USJCS Pub 1-02, ATP-3.2.)

minefield

In land warfare, an area of ground containing mines laid with or without a pattern. (AAP-6 Part 1 only.)

mutual support

1. That support which units render each other against an enemy, because of their assigned tasks, their position relative to each other and to the enemy, and their inherent capabilities.
2. In land operations, a condition which exists when positions are able to support each other by fire, thus preventing the enemy from mounting an attack against any one position without being subjected to fire from one or more adjacent positions.

non-persistent agent

(From an operational point of view) an agent which remains in the target area for a relatively short period of time after functioning of the munitions (normally measured in minutes, but in exceptional cases, several hours). (AXP-7.)

operational command (OPCOM)

The authority granted to a commander to assign missions or tasks to subordinate commanders, to deploy units, to re-assign forces and to retain or delegate operational and/or tactical control as may be deemed necessary. It does not include responsibility for administration or logistics. (AAP-6.)

operational control (OPCON)

The authority delegated to a commander to direct forces assigned so that the commander may accomplish specific missions or tasks which are usually limited by function, time or location; to deploy units concerned, and to retain or assign tactical control, of those units. It does not include authority to assign separate employment of components of the units concerned. Neither does it, of itself, include administration or logistic control. (AAP-6.)

operational level of war

The level of war at which campaigns and major operations are planned, conducted and sustained to accomplish strategic objectives within theatres or areas of operations. (NATO Agreed List No 66 dated 16 Jul 93). (See also Annex A to NATO Foreword to ATP-3.2.)

persistent agent

(From an operational point of view) an agent which remains in the target area for a relatively long period (normally several hours, days, or even in extreme cases, weeks). (AXP-7.)

pick-up zone

An area used for loading troops and/or equipment into helicopters. (ATP-3.2.)

pin-point

A precisely identified point, especially on the ground, that locates a very small target, a reference point for rendezvous or for other purposes; the coordinates that define this point. (AAP-6 Part 1 only.)

protective minefield

In land mine warfare, a minefield employed to assist a unit in its local, close-in protection. (AAP-6 Part 1 only.)

reinforcing

In artillery usage, a tactical mission in which one artillery unit augments the fire of another artillery unit. (AAP-6.)

screen

A security element whose primary task is to observe, identify and report information, and which only fights in self-protection. (AAP-6 Part 4 only.)

security

1. The condition achieved when designated information, materiel, personnel, activities and installations are protected against espionage, sabotage, subversion and terrorism, as well as against loss or unauthorized disclosure. The term is also applied to those measures necessary to achieve this condition and to the organizations responsible for those measures. (AAP-6.)
2. In land operations, the measures necessary to ensure that a force retains its freedom of action and is warned and/or protected against an unexpected encounter with the enemy or an attack. (ATP-3.2.)

tactical command (TACOM)

The authority delegated to a commander to assign tasks to forces under his command for the accomplishment of the mission assigned by higher authority. (AAP-6.)

tactical control (TACON)

The detailed and usually local direction and control of movement and manoeuvre necessary to accomplish missions or tasks assigned. (AAP-6.)

target signature

The characteristic pattern of the target displayed by detection and identification equipment. (AAP-6 Part 1 only.)

transport aircraft

Aircraft designed primarily for the carriage of personnel and/or cargo. (Extract from AAP-6.)

tempo

Tempo is the rate or rhythm of activity relative to the enemy, within tactical engagements and battles and between major operations. It incorporates the capacity of the force to transition from

one operational posture to another. Tempo seeks to impose threats to which the enemy is increasingly unable to react; his responses are made inappropriate in terms of either time or space. (ATP-3.2.)

Toxic Industrial Hazards (TIH)

The hazards resulting from the release, by any means, of TIMs resulting in contamination or irradiation of personnel or the environment, area or any particular object.

Toxic Industrial Materials (TIM)

A generic term for toxic radioactive compounds in solid, liquid, aerosolized or gaseous form. These may be used, or stored for use, for industrial, commercial, medical, military or domestic purposes. TIMs may be chemical, biological or radioactive and described as Toxic Industrial Chemical (TIC), Toxic Industrial Biological (TIB) or Toxic Industrial Radiological (TIR).

unit

1. Any military element whose structure is prescribed by competent authority, such as a table of organization and equipment; specifically part of an organization.
2. An organization title of a subdivision of a group in a task force. (AAP-6 Parts 1 and 2 only.)

**ANNEX A TO
GLOSSARY**

GLOSSARY OF ABBREVIATIONS

AA	Assembly Area
AAP	Allied Administrative Publication
ACA	Airspace Control Authority
ACE	Allied Command Europe
ACP	Airspace Control Plan
AD	Air Defence
AF	Amphibious Force/Augmentation Forces
AI	Area of Intelligence Interest
AIR	Area of Intelligence Responsibility
AJF	Allied Joint Force
AJP	Allied Joint Publication
ALP	Allied Logistic Publication
AO	Area of Operations
AOA	Amphibious Objective Area
AOC	Air Operations Centre
AOI	Area of Interest
AOII	Area of Intelligence Interest
AOIR	Area of Intelligence Responsibility
AOR	Area of Responsibility
AP	Anti-Personnel
ASC	Air Space Control
ASFAO	Anti-Surface Force Air Operations
ATF	Amphibious Task Force
ATO	Air Tasking Order
ATP	Allied Tactical Publication
BDA	Battle Damage Assessment
CAOC	Combined Air Operations Centre
CAS	Close Air Support
CATF	Commander Amphibious Task Force
CC	Component Commander
CCIR	Commanders Critical Information Requirement
CCIRM	Collection, Coordination and Intelligence Requirements Management
CCIS	Command, Control Information Systems
CIMIC	Civil-Military Cooperation
CIS	Communications and Information Systems
CLF	Commander Landing Force
COA	Course of Action
CoG	Centre of Gravity
COMAJF	Commander Allied Joint Force

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COMCJTF	Commander Combined Joint Task Force
COMSEC	Communications Security
CONOPS	Concept of Operations
COP	Contingency Operation Plan
COS	Chief of Staff
CSAR	Combat Search and Rescue
C2	Command and Control
C2W	Command and Control Warfare
C3	Command, Control and Communications
C3I	Command, Control, Communications and Information
DE	Directed Energy
DPC	Defence Planning Committee
ECM	Electronic Countermeasures
EEFI	Essential Elements of Friendly Information
EM	Electromagnetic
EMCON	Emission Control
EMS	Electro Magnetic Spectrum
EPM	Electronic Protective Measures
ESM	Electronic Support Measures
EW	Electronic Warfare
FFA	Free Fire Area
FLOT	Forward Line of Own Troops
FMB	Forward Mounting Base
FOB	Forward Operating Base
FSCL	Fire Support Coordination Line
FSCM	Fire Support Coordination Measures
GBAD	Ground Based Air Defence
GIS	Geographic Information System
GPS	Global Positioning System
HNS	Host Nation Support
HPT	High Pay-off Target
HQ	Headquarters
HUMINT	Human Intelligence
HVT	High Value Target
INFO OPS	Information Operations
INTREP	Intelligence Report
INTSUM	Intelligence Summary
IPE	Individual Protection Equipment
IPB	Intelligence Preparation of the Battlefield
IR	Intelligence Requirement
ISTAR	Intelligence, Surveillance, Target Acquisition and Reconnaissance

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JAOC	Joint Air Operations Centre
JF	Joint Force
JFACC	Joint Force Air Component Commander
JFC	Joint Force Commander
JFLCC	Joint Force Land Component Commander
JFHQ	Joint Force Headquarters
JFMCC	Joint Force Maritime Component Commander
JFSOCC	Joint Force Special Operations Component Commander
JIC	Joint Intelligence Centre
JIPTL	Joint Integrated Prioritised Target List
JITL	Joint Integrated Target List
JOA	Joint Operations Area
JTCB	Joint Targeting Coordination Board
LCC	Land Component Commander
LOC	Lines of Communications
MANPADS	Man-Portable Air Defence System
MC	Military Committee
MCM	Mine Countermeasure
MDF	Main Defence Force
MOOTW	Military Operations Other Than War
MW	Mine Warfare
NA5CRO	Non-Article 5 Crisis Response Operations
NAC	North Atlantic Council
NATO	North Atlantic Treaty Organisation
NBC	Nuclear, Biological and Chemical
NCC	National Contingent Command
NEO	Non-combatant Evacuation Operation
NFA	No Fire Area
NSE	National Support Element
NTM	Notice to Move
OCA	Offensive Counter Air
OPCOM	Operational Command
OPCON	Operational Control (also used to denote the NSTN (MHS))
OPLAN	Operation Plan
OPORD	Operation Order
OPSEC	Operations Security
PANDA	Personnel and Administration
PI	Public Information
PIR	Priority Intelligence Requirement
PSO	Peace Support Operations
PSYOPS	Psychological Operations

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ATP-3.2
Annex A to Glossary

RAP	Recognised Air Picture
RC	Regional Command
RFA	Restrictive Fire Area
RFL	Restricted Frequency List/Restrictive Fire Line
ROE	Rules of Engagement
RRF	Rapid Reaction Forces
SA	Situational awareness
SACA	Sub-Area Airspace Control Authority
SC	Strategic Command
SEAD	Suppression of Enemy Air Defences
SIGINT	Signals Intelligence
SOP	Standing Operating Procedure
TACOM	Tactical Command
TACON	Tactical Control
TALO	Tactical Air Landed Operations
TCN	Troop Contributing Nation
TIH	Toxic Industrial Hazard
TIM	Toxic Industrial Material
TTP	Tactics, Techniques and Procedures
UAV	Unmanned Aerial Vehicle
UN	United Nations
WMD	Weapons of Mass Destruction

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